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THE IBIS,

A MAGAZINE OF GENERAL ORNITHOLOGY.

EDITED BY

PHILIP LUTLEY SCLATER, M.A.,

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AND OF THE GERMAN ORNITHOLOGISTS' SOCIETY; ETC.

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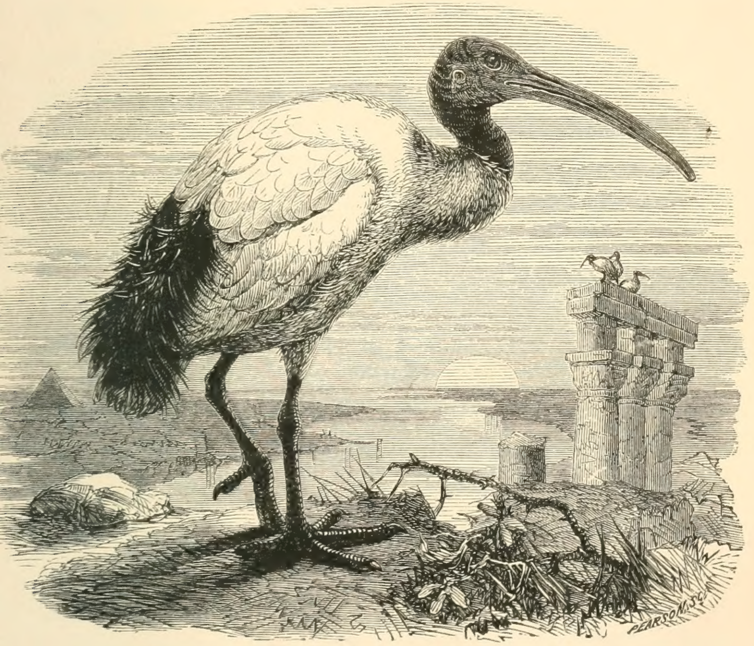

"Ibimus indomiti venerantes Ibida sacram,
Ibimus incolumes qua prior Ibis adest."

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PREFACE.

It is with no small degree of pleasure that the members of the British Ornithologists' Union offer the second volume of 'The Ibis' to the public. Their satisfaction arises from the successful issue of the experiment, upon which they have ventured. It was hoped in the first instance that there might be found a body of supporters sufficient to carry on a Magazine exclusively devoted to Ornithology. It was also hoped that this end might be attained without interfering in any way with Journals already established. Both these expectations have been entirely fulfilled. Every copy of the first volume of 'The Ibis' has been disposed of; and while it is certain that the number and scientific value of the Ornithological papers in other periodicals have in no respect diminished, it is believed that their circulation has suffered no loss through the establishment of the present Journal.

Since the publication of the last volume of 'The Ibis,' two meetings of the members of the 'Union' have been held, one in London in the month of November 1859, the other at Oxford on the 29th of June in the present year. At the latter, Mr. R. F. Tomes was elected to the vacancy in the list of members caused by the decease of Mr. John Wolley. At the same time it was determined, in order to mark the appreciation by the 'Union' of the favourable reception accorded to their project by Naturalists abroad, to elect ten Ornithologists, not residing in the United Kingdom, as honorary members. The names of these gentlemen will be found following the list of ordinary members.

It remains for the founders of 'The Ibis' to return their grateful thanks to all who have aided their undertaking, and especially to those who have so materially assisted the object in view by contributing additional illustrations. Had it not been for the liberal assistance, both of pencil and pocket, thus kindly exercised towards us, it would have been impossible to have exceeded the number of plates originally contemplated to be given with each part.

For the future, no efforts will be spared to render this Journal worthy of the flattering encomiums which have hitherto been passed upon it, and it is hoped that Naturalists of all countries will continue to second our endeavours by contributing to its pages articles and information of every sort relating to Ornithology. Such assistance will materially lighten our labours, and tend to render 'The Ibis' subservient to the best interests of the fascinating study which it is our object to promote.

PHILIP LUTLEY SCLATER
(*Editor*).

11, Hanover Square,
Oct. 1st, 1860.

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ERRATA.

Page 122 *et seq.*, Baron Richard König-Warthausen's name is misspelt König von Warthausen throughout the article.
Page 129, line 27, for "*tridactus*" read "*tridactylus.*"
Page 166, line 10, for "*minuta*" read "*maritima.*"
Page 172, line 11, *for* "1824" *read* "1823."
Page 270, line 10 and last line of note, for "*dumerillii*" read "*devillii.*"
Page 281, line 1, for "*stapezina*" read "*stapazina.*"
Page 322, last line, *for* "G. H. Gurney" *read* "J. H. Gurney."
Page 366, line 8 from bottom, for "*Erithacus*" read "*Erythacus.*"

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THE IBIS.

No. V. JANUARY 1860.

I.—*Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro.*

By the Hon. THOMAS L. POWYS, F.Z.S.

THE following notes were taken between the beginning of January 1857 and the end of July 1858. They are almost entirely the results of my own observation; and in the few instances in which this is not the case, the information was given me by persons on whose accuracy I could depend. My observations were chiefly made during shooting expeditions in the winter, as I had not become sufficiently inured to the summer heats in 1857 to explore the marshes of the mainland, or the olive-groves and *Arbutus*-coverts of Corfu; and during the same season of 1858 I was prevented from so doing by indisposition. These causes necessarily render my list of summer migrants very imperfect. I may also mention that I had no work on ornithology to refer to, except Temminck's 'Manuel,' and only one friend and companion who was at all interested in the subject of birds and their habits. I therefore claim the indulgence of the readers of 'The Ibis' for the many imperfections which they will doubtless discover in the following notes, and, "unaccustomed as I am to public writing," for deficiencies and rawness of style.

1. GRIFFON VULTURE. (*Gyps fulvus.*)

This Vulture is very abundant in Epirus, and indeed in all parts of the mainland which I have visited during the winter months. At Butrinto, a favourite shooting resort from Corfu, I have observed great numbers, particularly during the rainy weather of January and February of 1857, when they were attracted by the quantities of horses and cattle which died, and were left to decay in the marshes. Having mentioned to *a* (or, more properly speaking, to *the*) bird-stuffer of Corfu that I should like to have one of these birds alive, he in a few days procured me four from the mainland. They were all wounded, apparently by swords or knives, and three died soon after I first saw them. I administered gin-and-water and bullock's liver internally, and olive-oil externally to the fourth, who soon recovered sufficiently to lacerate my hands whenever I attempted to touch him, and eventually escaped with about five feet of stout rope attached to his leg. I never could discover that these Vultures bred in the neighbourhood of the coast; but a pair or two are to be observed at almost all seasons in the vicinity of Santa Quaranta, Tre Scoglie, Butrinto, Ptelia, Pagania, Livitazza, and Phanari, small harbours on the coast of Epirus frequented by sportsmen from Corfu.

2. Cinereous Vulture. (*Vultur monachus*) ?

I once, and once only, observed a very large black-looking Vulture engaged on the remains of a horse, near Butrinto, in the winter of 1857. It certainly was not *Gyps fulvus*. The Corfu bird-preserver told me that he had seen a Black Vulture from the mainland, but that it was very rare. This species is common in the island of Sardinia.

3. Egyptian Vulture. (*Neophron percnopterus.*)

Very common in summer on the mainland. A pair bred in 1857 in a low sea-cliff near Ptelia, about seven miles from Corfu, across the channel which separates the island from Albania, or more properly Epirus. I have been assured that it also breeds on San Salvador in the island of Corfu. The first I recognized was near Prevesa, in the Gulf of Arta, on the 15th of March, 1857. I have never observed them later than the beginning of September, and I never saw a specimen except in the white adult plumage.

4. Bearded Vulture. (*Gypaëtus barbatus*) ?

I can speak almost confidently, though not with complete certainty, of having observed this species on three separate occasions in Epirus and Ætolia. The first instance was on the 29th December, 1857, when shooting near the village of Kinouria, at the head of the lake of Butrinto. I then noticed a large vulturine-looking bird with a wedge-shaped tail, sailing at a considerable height, among a party of Griffon Vultures; his flight struck me as much lighter and more falconine than that of his companions; I noticed also the rich tawny-red colour of his breast. The only reason I had to doubt to what species he belonged arose from his small size, and I went on my way, after he had disappeared, deeply pondering on what he could be. The second time I noticed a Lämmergeyer was at Phanari, on the coast of Epirus. This time he came within twenty yards of us, as we were woodcock shooting, and received three barrels of No. 8 with no apparent effect. I was again in this instance struck by the small size of the bird; but there was the wedge-shaped tail—and what could he be but "*Barbuddu*," as the Sardes call him? The third instance was in Acarnania, near Port Platea, not far from the town of Tragomesti. This time there were a pair, and nothing to complain of as regards size. They were enormous birds and very dark coloured; in fact, till they came well over my head, I fancied they were specimens of *Vultur monachus*; but the cuneate tail set my mind at rest. I may mention that I have since noticed this species in Sardinia, and never observed any individuals either so small as the first here mentioned, or nearly so dark-coloured as the second or third. I especially call the attention of ornithologists visiting Turkey and Greece to these facts, as my own conviction is that there is a new species akin to *G. barbatus* to be discovered in those countries.

5. GOLDEN EAGLE. (*Aquila chrysaëtos.*)

This species is not very common, as far as my own observation goes, in Albania and Epirus. I have not seen it more than twice—both times near Butrinto.

6. IMPERIAL EAGLE. (*Aquila heliaca.*)

Not rare in winter on the coasts of Epirus. I have often observed it near Butrinto, and on the 18th of January, 1857, picked up a very fine specimen, dying from wounds, on the banks of the Butrinto river. A friend found another dead in the winter of 1858, in the great marsh between Santa Quaranta and Delvino in Epirus, about twenty miles north of Corfu. The Corfu bird-preserver assured me that this species breeds in the precipices of San Salvador in the island of Corfu. I have seen an individual of these species seize and carry off a Golden-Eye (*Anas clangula*), which had been wounded a few minutes previously by one of our party, whilst woodcock shooting near Butrinto. This is a much less wary species than the preceding, and will often allow one to approach within gunshot when perched on a tree looking out for wild-fowl, which seem to form its principal food in Albania.

7. Spotted Eagle. (*Aquila nævia.*)

Very abundant, in January and February 1857, in all the marshes of Epirus; less so, though still common, in the following winter. As soon as a gun is fired in any of the marshes about Butrinto, one or more of these birds is sure to appear, and keep flying about from tree to tree, apparently on the watch for prey, though I never saw them pursue any bird, and imagine that they feed chiefly upon rats, frogs, and such "small deer." I have seen this species several times in Corfu. I never observed it in summer, and, as far as I could find out, it is a regular winter visitor in Epirus, appearing in that country about the latter end of September, and remaining until the middle or end of March. I never saw one of this species except in or near marshes, and it is certainly the most tree-loving Eagle with which I am acquainted. It is not, according to my own observation, so common in Acarnania as in Epirus.

8. Bonelli's Eagle. (*Aquila bonellii.*)

I was shown a stuffed specimen of this Eagle at Corfu which was said to have been shot on the mainland, and I have several times observed birds in that country which I now believe to have been of this species. A pair haunted the precipitous face of a hill near Butrinto in the winter months of 1857 and 1858, and were the terror of any vultures or other birds of prey which passed near their abode. They were generally to be observed in fine weather, soaring at a great height in the air, and swooping fiercely at any bird larger than a pigeon which ventured to linger in their neighbourhood. I have seen them drive away Vultures, Imperial and Spotted Eagles, Ravens, Crows, and even a Peregrine Falcon. They are at once distinguishable from every other species of Eagle with which I am acquainted by their falcon-like swoop, square-cut tail, and very shrill and piercing scream. I have been lying in wait in a thick reed-bed, watching the flocks of divers species of ducks, coots, and other water-birds which enliven the Albanian lakes and marshes, and have often remarked that whilst the said wild-fowl would take no notice whatever of the numerous Marsh-Harriers which are perpetually hanging about the skirts of the lakes, and would merely lift their heads and utter a warning quack on the appearance of a Spotted Eagle,—immediately that one of these eagle-teasers (as we nicknamed the present species) was visible, the coots would rise and scutter into the reeds, the necks of the ducks would be extended flat along the surface of the water, and the incessant screaming of the waterhens and rails be hushed till the tyrant had passed over. I have twice seen this species settle upon and begin to devour mallards which I had wounded, and which flew to some distance before falling dead, but I never succeeded in getting a shot at the robbers. I have observed this species near Butrinto, as before mentioned, at Livitazza, at the mouth of the Kalamas, and at Phanari at the mouth of the Acheron. I always observed it in pairs and haunting rocks near the marshes.

9. White-tailed Eagle. (*Haliaëtus albicilla.*)

This species is often to be seen, though not abundant, in Epirus and Acarnania. A pair were almost always to be observed about the Bay of Butrinto in the autumn and winter. I watched a pair in February 1858 soaring and playing at a great height near the mouth of the Achelous on the mainland of Greece, about twenty miles east from the island of Ithaca. My Greek servant took two eggs of this species from a nest situate in the top of an old ash-tree in a wood on the banks of the Luro river, which runs into the Gulf of Arta, near the ruins of Nicopolis, and not far from the town of Prevesa: this was on the 17th of March, 1857. The old birds were very bold, and often came within gunshot of us; but I would not fire at them, as I did not want a specimen, and the shepherds begged us not to kill them, as they bred there year after year, and kept away other birds of prey which were destructive to their lambs. When my servant was within a few feet of the nest, a large snake put his head out of a hole and hissed fiercely at him, but he having crossed himself and implored the aid of St. Spiridione, the patron of Corfu, went boldly on and took the eggs, which are now in the possession of Mr. Alfred Newton. All the birds of this species which I observed in Turkey and Greece were in adult plumage.

10. OSPREY. (*Pandion haliaëtus.*)

Appears in Corfu and Epirus in March and September in considerable numbers.

11. SHORT-TOED EAGLE. (*Circaëtus gallicus.*)

I saw a Short-toed Eagle near Paleocastrizza in the island of Corfu, on the 7th of June, 1858. This was the only occasion on which I observed it in that part of Europe. I had previously become acquainted with this species near Tunis, and have since observed it, and obtained a specimen near Nice. I may here mention that I received a fine specimen of this bird alive from the Crimea in 1856. The favourite food of this individual was fish; and from what I have observed of the habits of these birds in a wild state, I should say that their food consists chiefly of reptiles and small fish, which they catch in the shallow lagoons and marshes. My bird was very fierce and untameable; and I have been informed by persons who have kept this species in captivity that it is generally wilder and more intractable than any other raptorial bird.

12. HONEY BUZZARD. (*Pernis apivora.*)

There is an immature specimen of this bird stuffed at Corfu, which was killed in the island by a friend of mine who has resided many years in the Ionian Islands and is fond of ornithology. He assured me it is the only one of this species that he ever saw, or heard of, either in the islands or in Albania. I saw a bird which I can assign to no other species, in an olive-grove near Prevesa in Epirus on the 21st of March, 1857.

13. COMMON BUZZARD. (*Buteo vulgaris.*)

This bird was very common in Corfu and Epirus during the early part of 1857. It disappeared about the end of February; and I did not see a Buzzard again till the 7th of November, 1858, when I killed a fine specimen in the island, about six miles from the town of Corfu. I saw very few, either in the island or on the mainland, during the ensuing winter, but I observed one near Govino in the island in June 1858. It frequents the olive-groves in the island and the old woods of the mainland. A pair haunted the citadel-rock of Corfu during the first winter I passed there.

14. Peregrine Falcon. (*Falco peregrinus.*)

Common in Epirus in winter, where it is of great assistance to the wild-fowl shooter. Occasionally breeds in the island of Corfu, where I have observed it near Pelleka in April 1857. The friend mentioned above as having shot the Honey Buzzard, assured me that in the island of Cerigo this Falcon is very abundant, and feeds almost entirely on insects! Can he have mistaken La Marmora's Falcon (*Hypotriorchis eleonoræ*) for this species?

15. Hobby. (*Hypotriorchis subbuteo.*)

Common in Corfu in spring and autumn. I have an immature specimen which was shot by an officer of the 3rd Buffs on the roof of Fort Neuf Barracks at Corfu in April 1857. I saw a Hobby near Cettinje, the chief town of Montenegro, in August 1857.

16. Merlin. (*Hypotriorchis æsalon.*)

Of frequent occurrence in Epirus during the winter months. I have seen a Merlin shot in the Val di Roppa, a marshy valley about seven miles from the town of Corfu, much frequented by sportsmen for snipe-shooting. All the Merlins that I saw, dead and alive, during my stay in Greek waters were in the adult male plumage. I have seen as many as five wounded snipes carried off by a bird of this species in an hour's snipe-shooting near the mouth of the Butrinto river.

17. Kestrel. (*Tinnunculus alaudarius.*)

Not common, according to my own observation, in Epirus and Corfu. I have seen one or two Kestrels in the island in April and May, and once shot one near Santa Quaranta in the winter of 1857.

18. LITTLE KESTREL. (*Tinnunculus cenchris.*)

Visits Corfu and the mainland in spring. I killed a specimen near Prevesa on the 20th of March, 1857, and bought a good pair in the Corfu market in the month of April of the following year. This and the following species are seen in small flocks of from five to ten or twelve, and appear to feed exclusively on insects.

19. ORANGE-LEGGED HOBBY. (*Erythropus vespertinus.*)

Arrives in Corfu, occasionally in great numbers, about the latter end of April. In the spring of 1857 I did not hear of, or see, more than two specimens in the Corfu market; but in April 1858 this species was very abundant in the Ionian Islands, particularly at Fano, a small rocky island to the north of Corfu, celebrated as a favourite resting-place for immense flights of quails during their vernal migration. This Hawk appears to be very fearless of man. I have watched a flock of five or six for upwards of an hour, during which time they often approached within ten or fifteen yards of where I sat, though I was in no way concealed. As far as my own observation goes, this species only remains for a few days in Corfu on its passage northwards. I have never heard of its occurrence in the island except in April and May. The stomach of a specimen which I saw skinned contained the remains of large night-flying moths. Both this species and the Common Hobby are to be observed on the wing as late as 8 or 9 P.M. This bird often alights on the ground, and runs with great ease and speed.

20. GOSHAWK. (*Astur palumbarius.*)

Not very common. I have observed it twice only in Epirus: the first time near Kinouria, where it stooped at a woodcock which I had wounded; this was on the 29th of December, 1857; and again at Butrinto, on the 2nd of January, 1858. Both these were immature specimens. I saw a fine pair of Goshawks stuffed at Santa Maura in March 1857, which had been killed in that island not many weeks before. I am told that this species is common and breeds in Albania proper, Montenegro, and Bosnia, in which last province it is trained for taking hares. The Goshawk seems to be an object of special aversion to rooks, magpies, jays, &c., who will allow a buzzard, harrier, or falcon to remain unmolested in their haunts, but immediately pursue this species with loud cries, and every appearance of excessive hatred and defiance.

21. SPARROW HAWK. (*Accipiter nisus.*)

Very abundant in winter in Epirus, Acarnania, and Corfu. A few remain to breed.

22. KITE. (*Milvus regalis.*)

Not common in Epirus. I did not see a single specimen during the first winter that I passed among Greek Seas. I noticed a pair several times about Butrinto during the very severe frosts of December 1857 and January 1858, and found the species rather abundant in Acarnania in the last-named and following months. Among the fine oak forests in the neighbourhood of Tragamesti, a pair or two were generally to be seen, soaring in circles at a great elevation, and occasionally swooping down near the tree tops. The bird-stuffer at Corfu did not recognize this species by its Italian, Greek, or English names, and told me that he had never seen or heard of any hawk with a forked tail. The Greek shepherds in Acarnania, when we pointed out this species to them, said they had never before noticed it. From these circumstances I think we may infer that this species is a rare and only occasional visitor to these parts, though it is very common and a constant resident in Sicily and Calabria.

23. MARSH HARRIER. (*Circus æruginosus.*)

Perhaps the most abundant of the *Raptores* in these parts. It seemed to be less common during the last winter than in the first which I spent in these countries; but from two to a dozen were almost always to be seen in every marsh in Epirus, Acarnania, Albania, and Corfu. Very few remain to breed in these parts, the main body making its appearance in the beginning of November and disappearing in March. I once counted twenty-six of these birds on the wing together near Butrinto.

24. HEN HARRIER. (*Circus cyaneus.*)

Common, and breeds in Corfu and Epirus.

25. Montague's Harrier. (*Circus cineraceus.*)

Less common than the last species, but not rare in Epirus in winter. The great marsh of Livitazza is a favourite haunt of this Harrier.

[To be continued.]

II.—*On Birds collected or observed in the Republic of Honduras, with a short Account of a Journey across that country from the Pacific to the Atlantic Ocean.* By George Cavendish Taylor, F.R.G.S.

I purpose giving some account of the birds collected or observed during a journey across the Central American Isthmus, from Fonseca Bay, on the Pacific Ocean, to Omoa, on the Atlantic, made in the winter of 1857–8, in company with Lieut.-Colonel Stanton, C.B., of the Royal Engineers, Mr. Amory Edwards, of New York, and others.

But before entering into a detailed account of the birds met with, I think it will be advisable to give such a description of our route, and of the country passed through, as may serve to render intelligible many allusions made in the subsequent notes. On meeting Colonel Stanton in New York, he informed me that he was going, under the direction of the Foreign Office, to Honduras, to report upon the feasibility of a scheme for constructing a railroad between the Gulf of Fonseca, on the Pacific, and Porto Caballos, on the Atlantic. To assist in the survey, three Sappers of the Royal Engineer Corps had been sent with him, one of whom was Corporal Church, lately returned, in company with Dr. Barth, from Kuka and Lake Tchad in Central Africa. Church carried a photographic apparatus with him, and made a large collection of photographs during our progress through the country.

Mr. Amory Edwards was connected with the promoters of the railroad, and having been previously in Honduras, and speaking Spanish fluently, was of the greatest service in carrying out the objects of the expedition. I hardly know how we should have got on without him. He was also of great assistance to me in my ornithological researches, as he had a taste for natural history, and during his former residence in Honduras had made a considerable collection of birds.

Colonel Stanton proposed to me to accompany him, and as so favourable an opportunity of visiting a little-known country was rarely to be met with, I immediately accepted the offer.

We left New York by different routes. Mr. Edwards and the Sappers went by sea. Colonel Stanton and I descended the Mississippi to New Orleans, and joined the former at Havana, whence we proceeded to Aspinwall. At Havana I first observed the Frigate Pelican (*Fregata aquila*). We crossed the Isthmus from Aspinwall to Panama by the railroad. The line passes through some of the finest forest scenery I have met with during my stay in the tropics. I there saw Parrots, Macaws, and Humming-birds in a state of nature. The jungle grows close up to the edge of the railroad, and the trees often overhang the line. Wherever the train stopped, I observed Humming-birds among the flowers and trees. Monkeys are abundant in the forests; but I was told that since the line was opened they seldom showed themselves in its vicinity, being, no doubt, alarmed by the noise of the trains.

The day after our arrival at Panama we sailed in the screw-steamer 'Columbus' for La Union, in the Gulf of Fonseca, where we were to land. The voyage occupied the best part of six days. We stopped at Punta Arenas, at San Juan del Sur, and Realejo. At the first-mentioned place we were delayed fully twenty-four hours. At each place I went ashore, and did not fail to see Doves, Macaws, Parakeets, Anis (*Crotophaga sulcirostris*), Cuckoos (*Piaya*), and various others of the common species inhabiting Central America. The sea was uniformly calm during our voyage. I observed a great number of Yellow Snakes*, about 3 feet long, basking on the surface of the water. I also saw some Flying Fishes (*Exocœtus*). On our voyage from Havana to Aspinwall the latter were very numerous. Large numbers of them would rise from the water near the bows of the ship and scatter themselves in all directions.

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* All the Sea-snakes at present known to science are confined to the Eastern seas. It would be very desirable to procure specimens of these Western Sea-snakes, as they would doubtless be of new species, and probably of a different form from the *Hydrophiidæ* of the East.—Ed.

It does not appear to me, after much observation, that these animals have the power of turning in the air, but that they can only fly in a direct line, unless they happen to assume a new direction, by ricocheting from the edge of a wave.

The 'Columbus' passed between Quibo Island and a smaller island, further to seaward, which, the captain informed me, is chiefly inhabited by Monkeys and Peccaries.

The Gulf of Fonseca is a fine sheet of water; it is studded with volcanic islands, densely covered with wood to their very tops. About sunset, on the 23rd of December, we arrived at La Union, and disembarked immediately. We remained there only three days, and crossed on the 26th to the island of Tigre in a boat. La Union is, no doubt, a good locality for bird-collecting; it is built at the foot of the mountain of Conchagua, formerly a volcano. Mr. Hardcastle, an Englishman residing in New York, who was a fellow-passenger with us in the 'Columbus,' and who subsequently travelled extensively in Central America, ascended the mountain and saw quantities of monkeys. The ascent is easy and may be performed on mules. I was sorry to be unable to go, the more so as he had a splendid view of the surrounding country.

We remained twelve days in Tigre Island, and during that time lived in a deserted house on the sea-shore, which was full of the nests of multitudes of red wasps. These, however, caused little annoyance beyond their constant presence. The Sappers lived in another house at the edge of the jungle; it abounded (rather too much to please me) with scorpions and large hairy spiders (*Mygale*). Not a day passed that the Sappers did not kill some of these monsters. On one occasion I saw a large spider 3 or 4 inches in diameter driven from under some furniture and killed with a sword!

Tigre Island is a volcanic mountain, and densely wooded, except a small bare space at the summit. I did not go up, as one cannot ride, and walking up a mountain in this climate and through dense bush is not to be thought of. I used to get many birds near an old crater, now a lagoon, full of long reeds and floating grass, to which they resorted to drink, morning and evening.

Tigre Island was not a good place for bird-collecting, as the bush was too dense, and the walking very bad. Several other islands were not far off, where, no doubt, much might have been done; but, except the visit* to the island frequented by the Frigate-birds (*Fregata*), my excursions were confined to near home, as boats were not easily obtained; and, moreover, I had as much to occupy me there, during the time I remained, as I could well get through. One cannot do so much in a hot climate as in a cool one. Energy diminishes with heat and loss of strength, and one feels inclined to take things easy, finding that lying in a hammock during the heat of the day is a pleasanter occupation than skinning birds. However, I was generally out soon after break of day, and again in the evening. Another great drawback are the ticks and *Agarrapatas,* about which I shall presently say more. A large island opposite to Tigre, called 'Saccate Grande,' is reputed to be full of Jaguars (*Felis onca*). They do much damage among the cattle. The usual mode of hunting them is to use dogs, which drive the jaguars to tree, when they are easily shot. It was proposed that we should devote a day or two to hunting them, but, owing to circumstances over which I had no control, the scheme was necessarily abandoned.

We left Tigre on the 9th of January, and went by boat to La Brea, some fifteen miles. There we took mules, and having crossed an open plain to Nacaome, halted for the night. Next day we rode to Langui. On the way I saw Deer cross the path, and Rabbits (*Lepus*), to all appearance much resembling English Rabbits (*Lepus cuniculus*). The country about Langui is rolling, and not much encumbered with trees.

The next day we went through Aremecina to Caridad, and the day following to San Juan. The day after that, we reached Lamani, at the southern extremity of the plain of Comayagua. After leaving Aremecina, where we began to get into the mountains, until we reached the plain of Comayagua, I saw but few birds. Upon one occasion, when high up, a fine deer crossed the road about a hundred yards before me; and on another occasion, while halting for breakfast, I went out with a gun, and saw a black animal, about the size of a fox, with a bushy tail*, jump out of a patch of sugar-cane, just out of gun-shot. Among the pine ridges on the summit, 3000 feet above the sea, I observed very few birds, except a covey of small Partridges (*Ortyx*). These, by the way, I used frequently to see, but was not able to obtain, as they generally frequented thick bushes, and were difficult to find and raise. With the aid of a good dog, I have no doubt that I might have shot some, and other game as well. We had with us a dog called 'Dash,' miscalled a setter, which Mr. Edwards had brought with him from New York; his accomplishments, however, extended no further than barking, or scratching at the innumerable fleas and ticks which infested him. So useless was he, that we left him at Comayagua when we started for the Atlantic coast.

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* For an account of this, see vol. i. (1859) p. 150.

I should have obtained many more birds, but our journey was so unnecessarily hurried, that I could shoot only a few of such as I saw close to the roadside. Skinning them was out of the question. It was as much as I could do to take a brief description of the few I killed, and the halting-places were so wretchedly bad, that it was often with difficulty I did that. I saw many birds which I did not shoot, because I knew that I could not turn them to account, either by describing or skinning them. By proceeding leisurely, I should have had many more opportunities of procuring specimens. I might also have got birds at La Union, and have considerably increased my collection of *Grallatores* along the estuaries in the Gulf of Fonseca, if I could have remained longer on the Pacific coast.

We remained a night at Lamani, and rode the next day into Comayagua, over the plain, which is tolerably level, open in places, but mostly covered with forest. The day after our arrival I was taken ill with fever and ague, and was not able to go about for ten days. As we only remained seventeen days at Comayagua, I lost thereby much valuable time, and when I was able to go out, my excursions were considerably curtailed by debility resulting from the fever. There is much to be done about Comayagua. The vicinity of the town consists of open level plain with cactus-bushes on one side, dense jungle intersected by rivers and a rugged wooded country on the other. There are also swamps in the jungle in the rainy season. At the edge of the town are numerous orange-gardens. The plain of Comayagua is bounded by high mountains covered with trees. It was in these mountains that Mr. Edwards saw the tail-feathers of the Quesal (*Pharomacrus paradiseus*).

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* Perhaps an Anteater (*Myrmecophaga*).

On the 1st of February we started for the Atlantic coast. Instead of going by the most direct route, we decided to make a detour by the Lake of Yojoa, hitherto unknown to Europeans, and undescribed. Our first march was to Opoteca, where we remained the whole of the following day. The country about Opoteca is exceedingly mountainous, all up- and down-hill—so much so, that I could do nothing in such very hot weather. On the third day we rode to Siquatepeque. Our route lay over the tops of some of the highest mountains in the neighbourhood, 5000 feet above the sea-level. The vegetation consisted chiefly of long grass and pines. I saw nothing here but Blue Birds (*Sialia wilsoni*) and Crows (*Corvus*). Siquatepeque is situate in a beautiful open plain eight or ten miles long, 3600 feet above the sea-level, and surrounded by mountains. Here I shot several fresh birds, and would willingly have remained some days, but the morning following we proceeded on our journey to Taulevi. The country passed through was principally undulating ground, covered, not too thickly, with pine trees, and having a very park-like appearance. Before reaching Taulevi we had to descend, by a zigzag path, the face of a high and very steep hill. Shortly after leaving Siquatepeque, I saw some Deer escape from a large plantain-patch in a hollow. During the day I obtained nine new species of birds. We remained a whole day at Taulevi. It is picturesquely situated in a hollow in the mountains, closely surrounded by dense vegetation, and is, I should think, an unhealthy locality. Our delay there was in order to make necessary arrangements for our journey the next day to the Lake of Yojoa, the route to which lay through dense forest, and was seldom travelled. An essential part of these arrangements consisted in sending forward men to clear a path through the forest, and to engage boats for our passage down the lake. In the evening we sent out some boys to catch an Armadillo (*Dasypus*), which animals are plentiful thereabouts. Next morning they returned, bringing one (*Dasypus novem-cinctus*[*]?) alive in a net. We ordered it to be shelled, and dressed for cooking, and took it along with us. It was covered with a layer of fat fully an inch thick. At a tolerably early hour next day we started for the Lake of Yojoa, some three leagues distant, but in difficulty of transit fully equal to double the distance. For some way our route lay through open savannahs and across wooded hollows. It was in many places overgrown with bush, and consequently we were well covered with *Agarrapatas* before we had been long out. We then crossed a broad and rapid stream and entered a dense forest, through which the path, owing to disuse, had become almost obliterated. It was obstructed by fallen trees of all sizes, and the young vegetation had grown over them. If we had not sent forward a party to clear the way, we should never have got through. The men had *cut* a way through the forest. Owing to the number of fallen trees, the mud-holes, being sheltered from the sun, had not dried up. To avoid these, they had been frequently compelled to deviate from the old path and open a fresh one. Everywhere the track was full of the stumps of the young trees which had been cut away. However, the mules got well through it, and the baggage followed, greatly to my surprise. The forest was full of large and lofty trees, many of them Mahoganies (*Swietenia*). Most of the large trees had those buttresses at the base, which are so remarkable in tropical forest scenery. The underbrush was not very thick, but still too much so to make walking in the forest pleasant work.

After a ride of some hours we emerged into a small clearing with a few huts upon it, about half a mile distant from a river flowing from the lake, where we were to embark in canoes. It was an unhealthy and unpleasant locality, abounding in malaria and mosquitoes, so we were anxious to remain as short a time as possible. About half an hour before sunset we moved down on the mules to the bank of the river. The track was through one deep and continuous mud-hole. The whole party assembled on the bank. A fire was lighted; and we made a hurried meal on tea and armadillo. The flesh looked and tasted much like that of a young pig. Edwards was loud in its praise; but I did not eat much, as it was too fat and rich. I do not want to accuse any animal without good cause; but I was quite well when I ate it, and for two days afterwards was unwell, and had to take a strong dose of medicine to remove a bilious attack. This might have been occasioned by lying out all night in a canoe; but I think the armadillo is as likely, or more so, to have been the cause.

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[*] Lichtenstein says that the Armadillo of Mexico is perfectly identical with the South American *Dasypus novem-cinctus* (Abh. Akad. Berlin, 1827, p. 101).—Ed.

It was nearly dark when we embarked. The river flowed out of the lake, which was perhaps a couple of miles distant. There was very little current in it. The water was deep and still, and had a very *alligatory* appearance. The banks were covered with dense forest and lofty trees, which completely overhung and overshaded the river. In our way we disturbed numbers of Night Herons, whose cries, added to the croaking of innumerable frogs, made no inconsiderable noise. Every bush and bough contained fireflies; and the scenery was tropical in the extreme. I should have much liked to go along this river by daylight; it was evidently good bird-ground. The shores of the lake are covered with floating reeds; and, the wind being ahead, and occasionally too strong for us to proceed, we made fast to them until it lulled again. We had only some twelve miles to go, and by early dawn had arrived at our destination. While our luggage was being disembarked, I went off in a canoe, with Corporal Church, after some Ducks (*Dendrocygna autumnalis*) which I saw among the reeds. As they were not used to being shot at, they were not wild, and at the first shot I picked up three; a second discharge produced two. I was within easy distance of several of them, sitting well together, with their heads up, and had calculated on four or five at least, when, owing to the exceeding dampness of the air (for the fog had not yet cleared off), my gun missed fire. They had by this time become more wary; so, as the morning felt very *aguish,* and I was tired and hungry, I went in.

We remained two days at the Lake of Yojoa, putting up at a hacienda situated a few hundred yards from the edge of the water, called 'Agua azul' or 'Blue water,' from a large spring of deep blue tint which rises a short distance behind the house and flows into the lake. In one place it forms a deep basin surrounded by thick grass and water-plants, which float on the surface of the water. The people at the hacienda told us that it was full of alligators, and that they came ashore daily to bask in the sun. Accordingly, as soon as the sun was high enough, we went down with gun and rifle loaded, and saw an alligator 12 or 15 feet long, lying on the bank at the edge of the water. We were perhaps eighty yards away, and could not approach nearer. Col. Stanton fired at him, and, I think, missed, as I did not hear the *thud* made by a ball striking its object. The alligator, however, plunged in at once among the floating grass, and we saw no more of him. He moved so quickly that I had not time to fire my gun. Either the same or other alligators * came out again several times during the day, on to the same bank, and again the day following; and several shots were fired at them, but without any evidence of success.

Every tree and blade of grass near the hacienda swarmed with *agarrapatas*. We could not go twenty yards without catching these tartars. They were more numerous here than in any other place where I have been before or since. There were a great number of cattle about; and the number of agarrapatas is corroborative of the assertion that they most abound where there are cattle.

Next day I went out in a canoe to shoot among the reeds on the lake, taking with me Nicazio, our rascally bad cook, to paddle. It was the only sort of sport that could be followed without danger of agarrapatas. Owing to the villainous paddling of Nicazio, whose performances afloat were even worse than his cooking, I was not very successful. I saw several different species of Ducks in considerable numbers, Anhingas (*Plotus*), and Cormorants; also plenty of Coots (*Fulica*), Gallinules, and Jacanas (*Parra*) in dozens. There were likewise various kinds of Herons (*Ardeidæ*). I also saw some alligators floating with their heads raised above the surface, like the head of a dog when swimming; but they sank before the canoe got near them. The reeds and grass were frequently growing in a great depth of water, in many places twenty feet at the very least; and our passage was often obstructed by mud-banks, as well as by the thick growth of lilies and other water-plants.

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* The Alligator (*Alligator mississipensis*) being only found in North America, the animal referred to here is probably a Crocodile (*Crocodilus americanus*).—Ed.

The lake is surrounded by high mountains, and the scenery is beautiful. Much in the way of ornithology might have been done there, with good health and fewer agarrapatas; but I was forced to proceed in company with my party. Leaving the lake, our first day's march was to the town of Yojoa, principally over savannahs and open ground. From Yojoa we proceeded to Potrerillos, an unhealthy locality, enclosed by lofty hills, which shut out the breezes and prevent the necessary ventilation of the town. From the neighbourhood of Yojoa to the Atlantic, palm-trees and bamboos were common in the forests; and our route frequently lay for miles together through long vistas of them, where we were completely shaded from the sun by their feathery branches, which drooped over the path and had a most picturesque effect. Although the shade was pleasant, it was productive of some inconvenience; for, as the rays of the sun could not penetrate, the track was in these spots obstructed by deep mud-holes which never dry up. Between Yojoa and San Pedro we halted for the night at a hacienda by the roadside. I have every reason to remember it well; for, while I was asleep, one of the women there thought fit to drink a quantity of a solution of corrosive sublimate in spirits of wine, which I kept for my bird-skins, under the impression that it was *aguardiente*. She fortunately drank too much, and vomited it up again; or nothing we had at hand could have saved her. As it was, she had a narrow escape from death, and was exceedingly ill in consequence, and still more frightened than hurt.

Near San Pedro I saw Monkeys for the first and only time in Central America. There were not many of them; but the sappers, who were riding a little ahead of us, saw forty or fifty together; they were of a large size, brown, with white faces and long tails. Soon after leaving San Pedro we crossed a high range of mountains, and arrived at Omoa on the 14th of February. As it was Colonel Stanton's intention to remain on the Atlantic coast only a few days, and to return to La Union by the most direct route and with few stoppages, I did not consider that it was worth my while to go twice over the same ground, especially as in such rapid travelling I could do but little in bird-collecting. Accordingly as soon as I arrived in Omoa I engaged a schooner, and sailed the same night for Belize, to be in time for the monthly departure of the mail steamer to Jamaica.

I should much have liked to remain some time longer in Honduras, and especially to have gone to Porto Caballos, the proposed Atlantic terminus of the Interoceanic line, where Waders and Water-birds were said to be plentiful; but a month would have been too long for me to remain on the Atlantic coast after my friends had left; and to return to the Pacific was out of the question. So I was forced to depart at once, and leave much undone, to my great regret. The passage to Belize occupied three days, as the winds were light and contrary. I saw no birds on the voyage, except a few Pelicans and Boobies.

During my stay in Honduras I only met with two Snakes: one was near Omoa. Mr. Edwards pointed it out, slowly winding up a bank close to the road; he said it was a Corral Snake and poisonous. It was small, and, as far as I could see through the thick vegetation, barred with yellow and black. The other was near the lagoon in Tigre Island; it darted into the water from under a decayed tree on which I stepped. Lizards and Iguanas were common, especially on the Pacific slope. The latter were often of large size; they would run up the trees like cats, and sit on the branches watching us. They are said to be good eating; but of course a good cook is indispensable, and ours was all but useless.

Monkeys I believe to be plentiful; but, as I have already mentioned, I only observed them once.

Jaguars (*Felis onca*) and Peccaries (*Dicotyles*) are common throughout the country; but I did not see any. One day, while riding through one of the palm forests on the Atlantic slope, a good-sized Tiger Cat crossed the path some distance ahead of my mule. I *heard* talk of Tapirs and Pumas. In such a country as Honduras, where the population is scanty, where there are no roads besides mule-tracks, and where the forests are so dense and extensive, there may be any number of animals living unseen, unless they happen to cross or be near the track while the traveller is passing. Deer are not uncommon. I saw two kinds: one was small, of a pale fawn-colour; the other about the size of the North American Deer (*Cervus virginianus*), and of a dark colour, like a Roe-deer in its winter coat. Armadillos are abundant, but are rarely seen, as they lie underground in the daytime, burrowing like rabbits.

But although the passing traveller in Honduras does not see much animal life, he will feel its influence, to his ample annoyance. He will be bitten by fleas, lice, mosquitos, sand-flies, ants, jiggers, ticks, and *agarrapatas.* At Tigre, where we used to say that everything bit, we could not enter the sea without being attacked by small shrimp-like animals. Even the fishes persecuted us. When bathing in a small stream near San Pedro, hundreds of them, about the size of minnows, dashed at our legs, and caused such an irritation as to drive us out of the water. Standing on land, we suffered from the bites of numberless mosquitos until our clothes were hurried on again. As for the ants, their name is legion. I do not know whether they should be called buccaneers or filibusters; but they appropriate every thing they can get at, and locate themselves everywhere. They are wonderfully industrious in carrying out their predatory views, and display a great contrast to the inhabitants of Honduras, who do not know what industry means, and abhor continuous labour. There are two colours of ants—black and red—and a great variety of sizes. Some of the large black ones are half an inch long. Those in the houses are generally of the smaller sizes. Every tree and bush is infested with some kind or other of them. If you shoot a bird, and do not speedily pick it up, it will be covered with them. If you lay a bird down for a few minutes, beware how you take it up; for, if you do so incautiously, they will be on your hand in no time, and resent your claiming your own, by instant biting. They are most savage little wretches when interfered with or molested. Take care also how you sit down, either in the forest or anywhere out of doors, or you may jump up again quicker than pleases you. The house we occupied at Comayagua was overrun by ants. They were constantly occupied in excavating the walls, and depositing the earth, in the shape of pills, in large heaps on the floor below. Nothing would stop them. Gunpowder was tried, and arsenic mixed with sugar was poured down their holes; but to no purpose, still the mining went on. The tables and food were overrun, and the latter damaged by them. They got into tea, beer, wine, and every thing else that was left exposed. If a piece of bread, meat, or fruit was left on a table for an hour or so, they would find it out and would soon be seen, in a long stream, passing to and fro over the floor, and up the legs of the table. The only way we could keep our bread from them was by putting it in a basket suspended from a beam by a single string. I was obliged to do the same with the birds shot; for if left on a shelf or table, the ants would quickly find them.

I have not been able to make out at what season the birds breed in Honduras. The Frigate Pelican was breeding on the 1st of January; and on the Pacific Slope I found a few fresh nests of *Tyrannidæ*. I also noticed a pair of large hawks making a nest near Comayagua; but these were the only instances observed. I saw no nests whatever on the Atlantic slope, although I was always on the look-out for them. But the density of the bush, the thorns, and the certainty of being covered with ants, ticks, and other ferocious insects upon attempting to penetrate it, restricted my researches in this particular. During my stay in the country, my constant attention was given to ornithology. I often sat up a great part of the night, to skin birds I had killed during the day.

Butterflies of every size and colour are innumerable in Honduras. Mr. Edwards always carried a net with him, and obtained many different species, some of them of great size and rare beauty. The ants used to commit great depredations upon his collections.

But ants, wasps, mosquitos, and indeed all these united, were not half so noisome as the ticks and agarrapatas. These may truly be considered the curse of the country. The ticks are about the size of the common dog-tick. They hold on tight to the flesh and gorge themselves with blood, until swollen to the size of small peas, when they drop off.

The *agarrapatas* *, which are of much more diminutive proportions, being not larger than grains of fine sand, attack one by hundreds, burrowing in the pores of the skin, and causing a most intolerable itching. We all suffered more or less from them; and many of us were covered with sores caused by their bites. I suffered more than others, from going so much more among the bushes. There is no escaping agarrapatas, even when riding along the mule-path. They are brushed from the bushes and grass which grow by the side of the road, on to the traveller's clothes, and soon work their way through to his skin. They are the greatest possible drawback to comfort, and considerably damp the energies of an ornithologist. Their annoyance might be considerably lessened, if, on coming in from the woods, it were possible to make a comfortable toilet, take a bath, and put on a fresh change of clothes. But, roughing it as I was, and often going to sleep in the clothes worn during the day, they completely destroyed my peace of mind and body. I have been told that they were first introduced and bred in the cattle; and they certainly were most numerous where cattle most abounded, as at Agua Azul. Edwards told me that they only abound during the dry season, and that, during his residence after I had left, as soon as the rains began they disappeared. I know, however, that in Jamaica I was covered with them on some of the wettest days I ever recollect; and Waterton says that the "bête rouge," which abounds in Demerara, and which is probably pretty much the same thing, is most plentiful in the rainy season. I leave the reader to reconcile these conflicting statements, and ask pardon for introducing such a subject in a magazine devoted to ornithology: but, in fact, birds and insects are inseparably connected in the tropics; whoever pursues the former is sure to meet with the latter, and will find that they create an interest far more deep and lasting than agreeable.

The dress I should recommend to a traveller going where these pests are found, is a pair of loose white linen trowsers, fastened tight round the ancles, so as to prevent them crawling up the legs. The close texture of the linen prevents them creeping through, which they can easily do through the more open texture of cloth or flannel; and the white surface enables one to see them and brush them off.

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* The *agarrapata* is a small species of tick, of the genus *Ixodes*.—Ed.

A hip-jacket of linen is also desirable; and a "solar topee" is the best head-dress for a hot climate. For riding among agarrapatas I should prefer boots with long *canvas* tops, to draw over the trowsers, and fasten above the knee. I hope these hints may be of use to any ornithologist contemplating an expedition to countries where these animals are met with. The health of a traveller much depends upon his comfort; and the bites of insects are often apt to bring on fever.

I did not see much of the fishes of Honduras. At Comayagua a native went out and *shot* a few for us, in the river, with a bow and arrow. At the Lake of Yojoa we caught some, about half a pound weight: they were excellent eating. Fonseca Bay is full of fish; but we had great difficulty in persuading the natives to go out and catch any, although we promised to pay them well for all they brought. The exertion was too great for the lazy rascals.

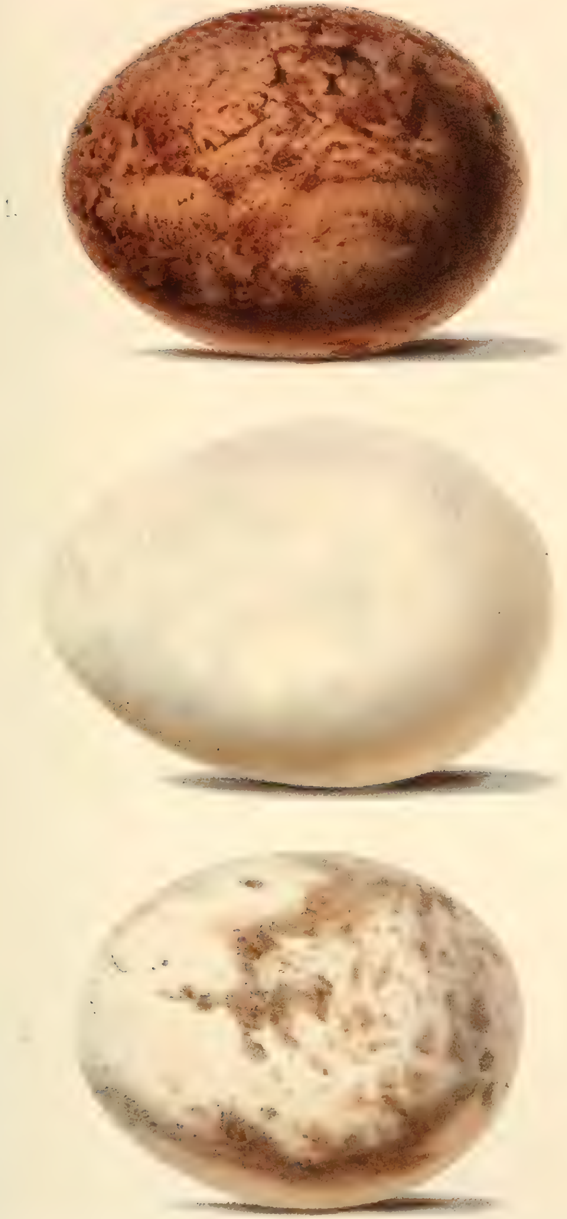
[To be continued.]

III.—*On the Eggs of Two Raptorial Birds from the Falkland Islands*. By Philip Lutley Sclater.

(Plate I.)

For the accompanying plate, representing the eggs of two species of raptorial birds of which specimens have lately been received in England for the first time, we are indebted to the liberality of Mr. J. H. Gurney, who, as many of our readers know, loses no opportunity of diffusing knowledge concerning this Order of Birds, to which he has devoted so much attention.

In the 'Proceedings of the Zoological Society' for last year (1859, p. 93), is a paper by Mr. Gould on "Birds from the Falkland Islands, with descriptions of the eggs of some of the species, from specimens collected principally by Captain C. C. Abbot, of the Falkland Islands Detachment." The specimens



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1. 2. [illegible]

now figured are from a second collection forwarded by the same gentleman, and belong to the following species:—

1. MILVAGO AUSTRALIS. (Plate I. figs. 1 and 2.)

The small group of *Falconidæ* to which this bird belongs is strictly American, and mostly confined to the southern portion of the continent, or Neotropical region, one of them only (*Polyborus tharus*) extending its range into northern America. Their carrion-feeding habits and the protrusion of the naked craw when gorged, in some of the species, have caused them to be generally arranged next to the Vultures, with the rank of a subfamily, *Polyborinæ*.

The present bird is only found in the Falkland Islands and the rocks of Diego Ramirez and adjoining islets, where it is extremely numerous. Mr. Darwin has given an interesting account of its bold and fearless habits. It builds, as he informs us, on the rocky cliffs of the sea-coast, but only on the outlying islets. The eggs sent by Capt. Abbott are generally of a deep red-brown colour, traversed with dark blotches and scratches, as in that represented by figure 1. Figure 2 is taken from what is stated to be "a very rare variety" of this egg, being nearly white, with mere obsolete indications of darker colouring. It is also larger in dimensions, and more elongated in form, than the ordinary dark specimens of the egg of this bird.

There are at present two fine specimens of *Milvago australis* living in the Gardens of the Zoological Society, and likewise examples of *Polyborus tharus* and *Milvago chimango*, both belonging to the same peculiar subfamily.

2. BUTEO ERYTHRONOTUS. (Plate I. fig. 3.)

This Buzzard, originally described by Capt. King as *Haliaëtus erythronotus*[*], seems to have a very wide range in the New World. From Cape Horn and the Falkland Islands it appears to extend all up the western coast of America into Mexico, specimens having been procured by Botteri at Orizaba, and by Boucard in the State of Oaxaca, within the confines of that republic*, which are apparently referable to this species. Whether Mr. Cassin's *Buteo cooperi*† of California, founded on a single immature specimen, is really distinct, is perhaps questionable. In Brazil and eastern South America, its place is occupied by the nearly allied *Buteo albicaudatus* (*Falco pterocles*, Temm. Pl. Col. 56 et 139), which, however, never seems to assume the deep-red back characteristic of the adult *Buteo erythronotus*. In the Falkland Islands, according to Mr. Darwin, this bird "preys chiefly upon rabbits, which have run wild and abound over certain parts of the islands." As to its manner of nesting, I regret to say we have no information, the eggs having been identified by being labelled as belonging to specimens of the bird sent with it.

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[*] Zool. Journ. iii. p. 424. See Strickland's 'Ornithological Synonyms,' p. 34, for its other names.

As represented in the third figure of our plate, these are of a greyish white, blotched and marked, principally towards the larger end, with two shades of umber-brown.

IV.—*Note on Wallace's Standard-wing,* Semioptera wallacii.

By Philip Lutley Sclater.

(Plate II.)

In accordance with the promise of further information made in last year's 'Ibis,' a representation is now given of the beautiful new Paradise-bird (or, as Mr. Gould terms it, Standard-wing) lately discovered by Mr. Wallace in the island of Batchian. By Mr. Gould's kind permission, our plate is copied from the figures of this remarkable bird recently published in the third part of his 'Supplement to the Birds of Australia.' And by the same gentleman's obliging loan of the typical examples, I am enabled to give a few remarks on its structure and natural affinities.

Mr. G. R. Gray, who first brought the Standard-wing before the notice of the scientific world at the meeting of the Zoological Society held on the 22nd of March last, agrees with the discoverer in considering it to be a Paradiseine form "approaching most nearly to the King-bird of Paradise" ‡ (*Cicinnurus regius*). Mr.

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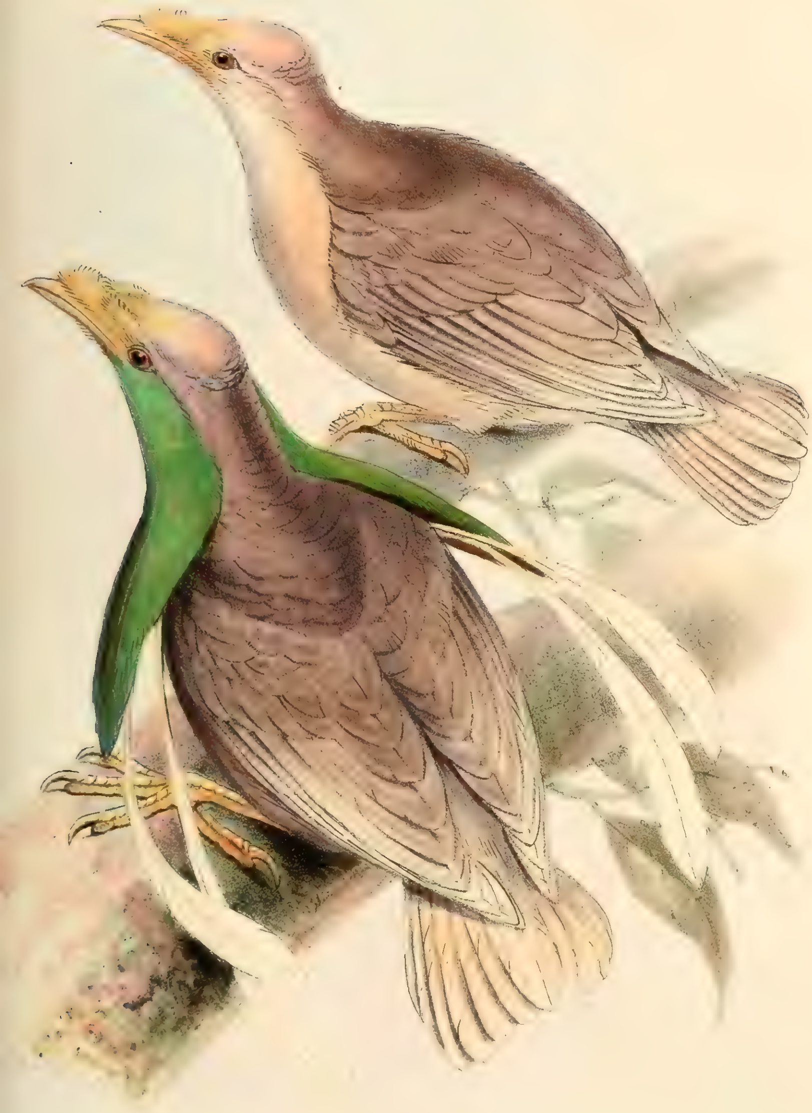
* See Proc. Zool. Soc. 1857, p. 211, and 1859, p. 389.

† Pr. Acad. Sc. Phil. viii. p. 253.

‡ See Proc. Zool. Soc. 1859, p. 130.



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Stannard & Dixon

SEMIOPTERA WALLACII

Gould, however, in the 'Supplement to the Birds of Australia,' states his opinion that it is "not a Bird of Paradise, if we regard *Paradisea apoda* and *P. papuana* as typical examples of that group, but very closely allied to *Ptilorhis,*—so nearly so, indeed, as scarcely to be separable from that form." Now, I am not so fortunate as to be able to agree entirely with either of these authorities, considering, as I do, that the present bird is somewhat intermediate in its characters between *Cicinnurus* and *Ptilorhis,* and that it is more nearly allied to both of these forms than to the true *Paradisea,* though I think it probable that all three genera really belong to the same natural family. In the narrow and elongated form of the nostrils, and their concealment by short, stiff, upstanding frontal plumes which advance far beyond the openings, *Semioptera* agrees more closely with *Cicinnurus.* In *Ptilorhis* the nostrils are barely covered by the frontal feathers. In *Paradisea* the nasal opening is rounded, and quite uncovered in front. Again, the *acrotarsia* of *Semioptera,* which consist of one smooth undivided scute, are very different from those of *Ptilorhis,* which are divided into five or six scutes; and they more nearly resemble those of *Cicinnurus.* The legs are also much stronger, thicker, and longer than in *Ptilorhis,* and in this respect are more like those of *Paradisea.* The wing-feathers of the new form are not so much broadened as in *Ptilorhis,* nor are the secondaries so much elongated; but in these respects it is equally unlike *Cicinnurus.* The general conformation of the wings of the three species is not essentially different. It may not be out of place to give comparative measurements of these three birds.

	Long. tota.	Alæ.	Caudæ.	Tarsi.	Rostri a rictu.
Semioptera wallacii	10·5	5·8	2·7	1·6	1·7
Ptilorhis paradisea	12·0	6·1	3·8	1·3	2·1
Cicinnurus regius .	6·5	4·5	1·6	1·1	1·2

On the whole, therefore, it will be reasonable to consider *Semioptera* as a very distinct genus; and I must be allowed to express some surprise that Mr. Gould should have spoken of it as "scarcely separable" from *Ptilorhis.* The two very singularly elongated feathers which spring from the base of the upper wing-coverts and extend beyond the primaries, not to speak of other differences, are, in my opinion, sufficient to distinguish it.

So much for *Semioptera wallacii.* It must have been with much regret that Mr. Wallace left Batchian without obtaining the second and finer species of the form which is said to exist there. Mr. Wallace's notes on the habits and living appearance of this singular bird are not yet arrived. They may probably guide us to some more certain conclusion as to its natural affinities. In the mean time those who wish to become better acquainted with its strange appearance, and to form their own judgment on the subject, have only to pay a visit to the British Museum. There, in the Bird-gallery, they will find two nicely-prepared square glass cases, in which a complete series of each of the Paradise-birds * obtained by Mr. Wallace is beautifully mounted and arranged.

V.—*Contributions to the Ornithology of Guatemala.* By OSBERT SALVIN and PHILIP LUTLEY SCLATER.

(Plate III.)

[MR. OSBERT SALVIN's first collection of birds from Guatemala having arrived, I have carefully examined them, and to the best of my ability determined the species. I now give a list of such of them as were not mentioned in our joint article on the Ornithology of Central America in last year's volume, together with the whole of Salvin's notes, whether relating to these birds or to others included in our first catalogue.

I have also taken this opportunity to insert in their proper places several birds well ascertained to inhabit Guatemala which were not mentioned in the former list. The total addition thus made to the number of the birds of Central America amounts to 35 species.

It will be understood that the whole of the field-notes in this article are from Salvin's pen, while I am responsible for the

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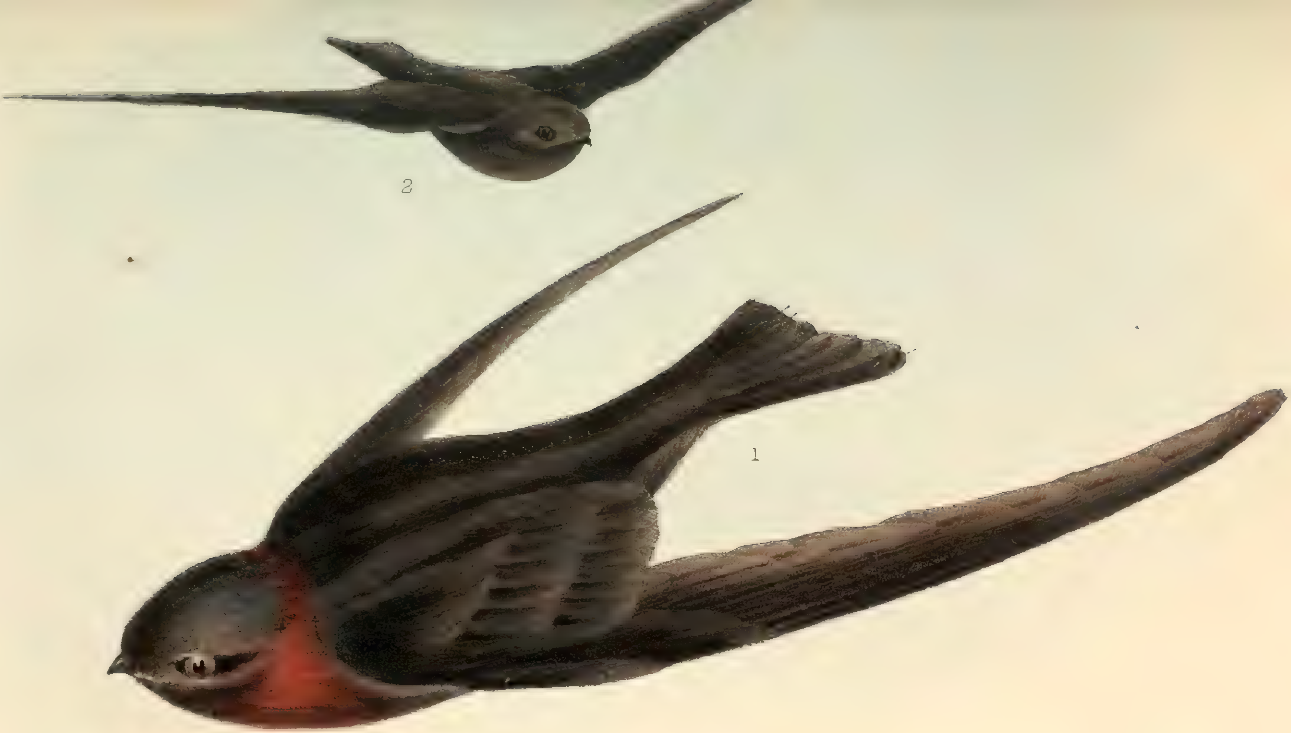
* The Great Paradise-bird (*Paradisea apoda*) from the Arû Islands; the Lesser (*P. papuana*) from Havre Dorey, New Guinea; and the King (*Cicinnurus regius*) from the Arû Islands.



E. Salvin ad nat. del. et lith.

M & N Hanhart Imp.

CHÆTURA RUTILA, Fig 1 ♂, 2 ♀.

determination of the species and remarks on the nomenclature and geographical distribution.—P.L.S.]

Fam. TURDIDÆ.

1. *Turdus rufitorques*, Hartl., sp. 4*.

Dueñas. Proceeding from Dueñas towards Alotenango, this Thrush is common, but on the northern side of the road from Ciudad Vieja to Dueñas I have never once seen it. This seems strange, as it may be met with abundantly, almost within shot of the road, on the southern side.

2. *Catharus melpomene* (Cab.), sp. 7.

Dueñas, July 23. Though hardly so sweet as that of the Robin of Europe (*Erythacus rubecula*), the notes of this bird bear no faint resemblance to those of our familiar songster. Towards evening it may frequently be heard in the wooded spots near Dueñas; but, owing to its shy habits and the thickness of the underwood to which it resorts, it is seldom seen. The eyes, bill, and eyelids of this bird are of an orange hue tending towards vermilion.

3. *Melanotis hypoleucus*, Hartl., sp. 12.

Coban and Dueñas. A young bird (obtained July 23rd) in nestling plumage; is of a uniform dull blackish, with the white feathers beginning to develope themselves on the breast and belly.—P. L. S.

Fam. SYLVIIDÆ.

4. *Sialia wilsoni* (Sw.), sp. 14.

Coban and Dueñas. "Resident all the year at Dueñas."—O. S.

Fam. TROGLODYTIDÆ.

5. CAMPYLORHYNCUS ZONATUS (Less.): Cent. Zool. p. 70.

Dueñas, July 18th. This bird is not found quite so low down as Dueñas; but on ascending a short distance, it is common. It is always found in companies of eight or ten, or even more, frequenting the upper parts of the forest. Its cry is loud and incessant, but partakes little of the character of that of a Wren. In its flight indeed it shows some affinity to these birds, but hardly in any other respect. A nest of this species, to which I ascended, was composed chiefly of dried vegetable matter, including dried flowers. It was a large loose structure, about fifteen inches in depth and twelve in diameter, placed in a fork of one of the upper branches of a tree, and had a side entrance near the top. It contained neither eggs nor young; but before ascending I saw one of the birds pass in and out several times. —O. S.

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* These numbers refer to those of the article in vol. i. of 'The Ibis.' The names of the species now added to the list are printed in capitals.

A well-known Mexican species, occurring in MM. Sallé's and de Oca's collections from Vera Cruz, but not previously known from Guatemala.—P. L. S.

6. *Cistothorus elegans*, Sclat. et Salv., sp. 18.

I constantly see several pairs of this Wren frequenting a few spots on the lake of Dueñas. I have been unable to discover the nest, but, as the young are not yet flying about, I may still succeed this season.

7. SALPINCTES OBSOLETUS (Say): Bp. Consp. p. 224. Vera Paz (Skinner). In Mr. Gould's collection.

8. THRYOTHORUS MACULIPECTUS, Lafr., Rev. Zool. 1845, p. 338. Vera Paz (Skinner). In Mr. Gould's collection.

9. THRYOTHORUS PLEUROSTICTUS, Sclater, sp. nov.

Umbrino-brunneus, remigibus extus et cauda tota nigro transfasciatis; superciliis a fronte ad nucham distinctis et corpore subtus albis: lateribus a cervice et crisso nigro late transvittatis: rostri plumbei mandibulæ inferioris basi albida: pedibus pallide corylinis: long. tota 5·2, alæ 2·2, caudæ 1·8, rostri a rictu ·85, tarsi ·9.

Hab. in prov. Veræ Pacis, reipubl. Guatemalensis.

Mus. P. L. S.

An example of this pretty Wren in my collection was kindly presented to me by Mr. Gould, by whom it was received from Vera Paz through Mr. Skinner. The species is a true *Thryothorus*, allied to *T. rufalbus*, *T. albigularis*, &c., but easily distinguishable by its pure white colouring below, broadly and regularly banded with black all down the sides.

Fam. MNIOTILTIDÆ.

10. HELMINTHOPHAGA PEREGRINA (Wils.): Baird, Rep. p. 258.

Coban. In winter (or immature?) dress.

11. BASILEUTERUS BELLI (Giraud): *Muscicapa belli*, Giraud, B. Texas. *Basileuterus chrysophrys*, Bp. Consp. p. 314: Sclater, P. Z. S. 1857, p. 202.

Coban. Previously known from Mexico.

Fam. VIREONIDÆ.

12. VIREO SOLITARIUS (Wils.): Baird, Rep. p. 340.

Coban.

13. VIREOLANIUS MELITOPHRYS, DuBus: Bp. Consp. p. 330: Sclat. P. Z. S. 1857, p. 213.

Coban. This is the first example of this beautiful bird that I have seen from Guatemala. It is scarce in Mexican collections, one example only having been obtained by M. Botteri, and one by Señor R. M. de Oca.

Fam. HIRUNDINIDÆ.

14. COTYLE FULVIPENNIS, Sclater, P. Z. S. 1859, p. 364.

Dueñas, July 17th, 1859. At this season of the year this Swallow is common on the open lands and flying about the lake. —O. S.

Recently described from a single specimen in Señor de Oca's collection from Jalapa.—P. L. S.

Fam. AMPELIDÆ.

15. *Ptilogonys cinereus* (Sw.), sp. 59.

Coban and Volcan de Fuego.

In the Volcan de Fuego, at an elevation of 6000 feet above the sea-level, I found this bird abundant in the early part of July. In its manner of taking its food it much resembles a Tyrant-bird (*Tyrannus*), but, besides seizing insects in the air, hops about the branches, apparently in search of other prey.

Fam. CŒREBIDÆ.

16. *Chlorophanes atricapilla* (Vieill.), sp. 62.

On comparing Guatemalan specimens of this bird with others from Trinidad, New Granada, the Upper Amazon, and Cayenne, I do not find differences sufficient for the establishment of specific separation.

17. Cœreba carneipes, Sclater, P. Z. S. 1859, p. 376.

One specimen only obtained, July 9th: a young male assuming the adult dress.

Fam. TANAGRIDÆ.

18. Pitylus poliogaster, Dubus.

Coban.

Originally described from Guatemalan specimens, but also occurring in Southern Mexico.

19. Arremon aurantiirostris, Lafr.

Coban.

20. *Phœnicothraupis rubicoides* (Lafr.), sp. 70.

Yzabal (June) ♀.

21. Chlorospingus ophthalmicus (DuBus).

Coban.

22. Pyranga bidentata, Sw.

Volcan de Fuego, alt. 5500 ft.

23. *Ramphocelus passerinii* (Bp.), sp. 76.

This magnificent Tanager is far from uncommon about the edges of the forest near Yzabal. The neighbourhood of the Campo Santo seems to be a favourite locality. I know of no bird that shows itself so brilliantly as it flies from bush to bush. At Yzabal it is commonly known as the *Arrozero*, or Rice-bird. The twenty-one birds collected at Yzabal prove, I think, that the immediate coast has been comparatively neglected by collectors, and that the series forwarded from Coban and other parts of the department of Vera Paz do not include many interesting species produced by the districts lying further eastward. Of the twelve species procured at Yzabal, only three occur in a collection formed at Coban, which contains over 100 species. This surprised me more at first than it does now that I have become more acquainted with the local distribution of the species. Yesterday (August 14th) I shot, on the Volcan de Fuego, an hour-and-a-half's ride from Dueñas, eight species of birds, of which seven were new to my collection. Yet this includes 250 species, among which are all but one or two of the common birds observed about Dueñas.

24. *Tanagra diaconus*, Less., sp. 78.

Dueñas, July 3rd. This is the first time I have noticed this bird at Dueñas. It is common on some parts of the coast.

25. *Calliste larvata*, Du Bus, sp. 80.

In the forest surrounding Yzabal this *Calliste* is commonly met with in the month of June, the neighbourhood of the Campo Santo being the locality in which I found it most abundant. The first morning that I went out I fancied that I saw it, but did not succeed in shooting a specimen. However, to make sure I was not mistaken, I remained another day, and succeeded in obtaining three specimens, and saw others. I found them usually in the open parts of the forest, flying about and hopping from tree to tree in pairs. I noticed nothing peculiar in their cry. It was feeble, but partook of a Fringilline character. From the perfect state of the plumage and the size of the eggs in the ovary, I am led to suppose that, late in the season as it was, no incubation had taken place.

26. *Euphonia affinis* (Less.), sp. 82.

Dueñas, July 4. This bird is numerous now, but escaped my observation last year. I usually find it feeding on the fruit of a tree called the '*Amate*.'

Fam. FRINGILLIDÆ.

27. Spermophila corvina, Sclater, P. Z. S. 1859, p. 379.

Common about Yzabal. No. 227.

28. Guiraca concreta (Du Bus.), Bull. Ac. Brux. xxii. p. 150: Sclat. P. Z. S. 1856, p. 302.

Yzabal, June 21. Only one specimen (no. 235), seen sitting on a branch when shot. Hitherto known only from southern Mexico.

29. *Hæmophila rufescens* (Sw.), sp. 96.
Dueñas (July 18), no. 288.

30. *Chrysomitris mexicana* (Sw.), sp. 99.
Is common everywhere about Dueñas. I found it on my arrival. Last year I did not meet with it.—O. S.

Fam. ICTERIDÆ.

31. *Sturnella hippocrepis,* sp. 101.

Dueñas, July 8th. "Still to be met with not uncommonly." —O. S.

32. *Cassiculus prevosti,* sp. 104.
Dueñas, July 3rd. "Also observed at Yzabal."—O. S.

33. Icterus mesomelas, Wagler, Isis, 1829, p. 755: Sclater, P. Z. S., 1856, p. 301.

Three immature specimens from Coban seem referable to this species, of which I have specimens from Mexico and New Grenada. One from Dueñas (July 25th) is also immature.—P. L. S.

34. *Icterus affinis,* Lawrence: sp. 112.

In various states of plumage yellow, chestnut, and in transition from Dueñas and Coban.—"Is now (July) numerous about the willow-trees. I am quite satisfied that all these specimens belong to the same species, though I somewhat hesitated about adopting that conclusion at first. The first time I saw this bird at Dueñas was July 17th."—O. S.

35. Molothrus æneus (Wagl.): Sclater, P. Z. S. 1856, p. 300.

A male, but not quite in full plumage, if identical with the Mexican bird, and requiring further comparison. "A very common species about Dueñas."—O. S.

Fam. CORVIDÆ.

36. *Corvus cacalotl,* Wagl.?, sp. 114.

"At this season (the middle of August) this Raven is abundant about the plains of Dueñas. A few days ago I shot four, whereas, last year, I never was within shot of one. The manners and habits of this bird are, as might have been expected, like those of *Corvus corax.*"—O. S.

The single specimen of this Raven sent is not in good condition. It is probably the bird called *Corvus cacalotl* by Baird (Rep. p. 563), if really different from *C. carnivorus*!—P. L. S.

[Fam. ANABATIDÆ.

37. **Anabates cervinigularis**, Sclater, P. Z. S. 1856, p. 288.

Coban. Known from Mexican collections.

38. *Synallaxis erythrothorax*, Sclater; sp. 123.

Yzabal, June 19. In the dense forest.

39. *Dendromanes anabatinus*, Sclater, P. Z. S. 1859, p. 54, pl. cl. et p. 382: sp. 126.

Coban.

40. *Sclerurus mexicanus*, Sclater, sp. 129.

Coban. Quite identical with Mexican specimens: not with Dr. Hartlaub's *S. guatemalensis.*

41. **Dendrornis erythropygia**, Sclater, P. Z. S. 1859, p. 366.

Coban.

42. *Picolaptes affinis*, Lafr. sp. 124.

Calderas, Volcan de Fuego, July 25th. Salvin is inclined to think this different from *P. affinis,* which he obtained the year before, 4000 feet lower down on the southern slope of the volcano. It is certainly rather smaller than my Mexican specimens, and the feet and bill are paler; but it is not quite mature, and I should hesitate to consider it distinct. It was obtained in the oak-forest.—P. L. S.

43. **Glyphorhynchus cuneatus** (Max.)?

Yzabal, June 19th. "Shot ascending a tree." The occurrence of this form here is novel and interesting. I doubt whether there is more than one good species of the genus.—P. L. S.

Fam. FORMICARIIDÆ.

44. *Cercomacra tyrannina*, Sclater, sp. 133.

Yzabal, June 21, mas juv. in bad plumage.

Fam. TYRANNIDÆ.

45. EMPIDONAX BAIRDI, Sclater, P. Z. S. 1858, p. 301.

Coban. Previously known from southern Mexico. See 'Ibis,' 1859, p. 442.

46. ELAINIA SUBPAGANA, sp. nov.

Cinerascenti-olivacea; pilei obscurioris, cristati plumis intus albis: alis caudaque nigricanti-fuscis, tectricibus alarum albido terminatis, secundariis olivascenti-albido stricte limbatis: subtus pallide flava, gutture cinerascenti-albo, pectore et lateribus cineraceo indutis: rostro nigro, mandibulæ inferioris basi flavida, pedibus obscure fuscis: long. tota 5·8, alæ 3·3, caudæ 3·1, tarsi 0·8.

Hab. in Guatemala.

Two examples of this bird were obtained by Salvin at Dueñas on July 31st. "In habits and cry this species is very like a *Myiarchus*; indeed for several days I mistook these very birds for *Myiarchus laurencii*, which is common here."—O. S.

The present species is certainly a typical *Elainia*, closely allied to *E. pagana* of South America, the type of the genus, but differing in its larger dimensions, more obscure plumage above, particularly upon the head, and purer grey throat.—P. L. S.

Fam. COTINGIDÆ.

47. LIPAUGUS UNIRUFUS, Sclater, P. Z. S. 1859, p. 385.

Coban. Described from Boucard's specimens from Oaxaca; previously sent by Mr. Skinner from Vera Paz.

48. PACHYRHAMPHUS MAJOR (Cab.): Sclater, P. Z. S. 1857, p. 78.

Coban.

49. *Pachyrhamphus* —— ?

Coban. A bird of uniform rufous plumage, but with the second wing-primary shortened, as in the adult males of this subfamily. It is probably a young male of one of the black species—*P. polychropterus* or *P. nigriventris.*

50. *Manacus candæi* (Parz.), sp. 170.

Yzabal. (218.) This bird is not uncommon. It sits in the thick underwood, and is more frequently heard than seen. The cry it utters begins with a sharp note not unlike the crack of a whip. This is followed by a rattling sound not unlike the call of a landrail, from which, however, it differs in being continuous and not repeated.

Fam. CYPSELIDÆ.

51. *Hemiprocne zonaris* (Shaw), sp. 174.

Dueñas. "This month (August) these Swifts may be seen almost every day, but they usually fly high—far out of gunshot. Birds with the collar perfect appear about as numerous as those in the plumage of the present specimen" (with the collar defined behind, but hardly marked in front.)—O. S.

52. CHÆTURA RUTILA (Vieill.): *Hirundo rutila,* Vieill. Nouv. Dict. xiv. p. 528: Enc. Méth. p. 534: *Hirundo robini,* Less. Trait. d'Orn. p. 270: *Chætura brunneitorques,* Lafr. Rev. Zool. 1844, p. 81.

(Plate III. fig. 1 ♂, 2 ♀.)

"Dueñas, July 25th. On this day I observed a considerable number of these Swifts flying over the open land near the house. Those with the rufous collar proved on dissection to be males; those without, females. I therefore conclude that they belong to the same species."—O. S.

The occurrence of this beautiful Swift in Guatemala is of great interest. I have seen New-Grenadian specimens, but they are scarce. M. Robin is said to have discovered it in Trinidad, and his specimens, now in the Museum of the Jardin des Plantes, form the types of Vieillot's and Lesson's descriptions. See Pucheran in Rev. et Mag. de Zool. 1853, pp. 443, 445.

53. CHÆTURA ——?

Fuliginoso-nigricans, uropygio et caudæ tectricibus superioribus dilutioribus, pallide fuliginosis: subtus pallide fuliginosa, gutture lactescenti-albo, ventre imo crissoque obscurioribus, nigricantioribus: rostro nigro, pedibus plumbeis: long. tota 4·3, alæ 4·6, caudæ 2·4, tarsi 0·45.

Hab. in Mexico et Guatemala.

An imperfect specimen from Coban transmitted by Salvin seems to be referable to this species, of which I have taken the characters from two skins obtained by M. H. de Saussure in Mexico. The bird is nearly allied to two South American species, *Chætura spinicauda* and *C. poliura*, but is immediately distinguishable by its pure white throat, passing into smoky brown on the belly. In *C. spinicauda* the throat is also whitish, but the belly is of a bluish ash-colour, and the uropygium is pale cinereous. In the present bird the uropygium and tail-coverts are of a pale smoky brown, like the belly.

It is probable that this Swift may be the *Chætura vauxi* (Baird, Report, p. 145) of Western North America, of which I have never seen specimens. It seems to agree with the figure of that bird, given in the 10th volume of the Pacific R. R. Reports, pl. 18.—P. L. S.

Fam. TROCHILIDÆ.

54. *Phaethornis adolphi*, Gould: sp. 177.

This is one of the commonest species of the family about Yzabal, and, I think, one of the most restless and active of them that I have yet met with. It searches the flowers growing from the ground to the height of about four or five feet.

55. *Campylopterus rufus* (Less.): sp. 178.

I saw only one example of this species at Dueñas last year. Now it is abundant in all parts, and instead of being one of the rarest is one of the most familiar species. There seems to be a slight difference in the notes of all the humming-birds that have come under my observation, which is more especially noticeable when several species frequent the same place. The call-note—if such it is—of *C. rufus* is very distinct from those of *Thaumastura henicura*, *Amazilia arsinoë*, and *Cyanomyia cyanocephala*, all of which are in their turn distinguishable one from another; but these differences, perceptible as they are to the ear, are not capable of being rendered intelligible in writing. It appears from dissection of specimens that the males only of this species have the remarkably strong shafts to the primaries, which are, I believe, peculiar to the genus *Campylopterus*. What habit pursued by the males and not by the females necessitates this strange feature ?

The flowers of the Banana (*Musa*) are much resorted to by this bird.

56. *Cyanomyia cyanocephala*, sp. 183.

Last year in a cypress-tree near the house at Dueñas a pair of these birds built their nest. This year on looking I found a branch of the same tree similarly tenanted, the new nest being a few yards only from where it was last year. To get at it I was obliged to cut away the branch, and, though in falling the nest was quite thrown on its side, the eggs, much to my surprise, did not fall out. This I afterwards found was owing to the lip of the nest, which in its natural state turns in considerably. This last week another pair have been building somewhere near the house, and the male bird frequently comes while I am preparing skins in the corridor and takes pieces of cotton almost from under my hand. Yesterday afternoon (Aug. 14) Mr. Wyld caught it making a descent upon some small object in his room. He shut the window and called me. The intruder, who was wearied from fluttering against the window, suffered itself to be caught. In a very few moments its agitation ceased, and it seemed to be taking advantage of its comfortable place in my hand to rest from its fatigues, making no attempt to escape. Before letting it go I procured a piece of sugar, and dipping it in water put it to the tip of its bill. Almost immediately its long tongue was employed in sucking up the liquid. On liberating it, it flew to a tree close at hand, and seemed to take no further notice of its late captivity. If its nest is not finished, I have no doubt I shall soon see it again seeking the wool. The wind produced by the wings of these little birds is considerable, as I noticed that while hovering over a large piece of wool the whole surface of the wool was violently agitated. This same bird makes daily visits to the vases of flowers placed in the rooms.

57. *Delattria viridi-pallens,* sp. 188.

Occurs in company with *Petasophora thalassina* on the Volcan de Fuego.

58. *Thaumastura henicura,* sp. 191.

At Dueñas the females of this species are much more commonly to be seen than the males. Occasionally, when flying, the elongated tail-feathers are stretched to a considerable angle.

59. *Amazilia riefferi,* sp. 198.

60. *Amazilia arsinoë,* sp. 199.

Both common in the forest about Yzabal. *A. arsinoë* is also frequently met with about Dueñas. I never observed it last year. As I now find it in one of the spots which I then used to visit most frequently, I judge that it is a migrant.

61. *Thaumantias candidus,* sp. 200.

Common on the Atlantic coast-region, about Yzabal, and thence one day's ride into the interior.

62. *Chlorostilbon osberti,* Gould.

A pair of this species resort to the flowers about our house at Dueñas.

One specimen was shot on the Volcan de Fuego at an altitude of 5000 feet above the sea-level—the highest altitude at which I have yet observed it.

Fam. GALBULIDÆ.

63. *Galbula melanogenia,* Sclater: sp. 205.

Coban.

Fam. BUCCONIDÆ.

64. Bucco dysoni, Sclater, P. Z. S. 1855, p. 193.

Coban. Discovered by Dyson in Honduras, and accidentally omitted from the former list.

65. Malacoptila inornata, DuBus, Bull. Acad. Brux. xiv. pt. 2, p. 107: Rev. Zool. 1848, p. 249.

Coban.

66. Malacoptila veræ pacis, sp. nov.

Ferrugineo-rufa, uropygio et cauda unicoloribus, dorso et alarum tectricibus maculis triangularibus pallidius rufis et ad basin linea nigricante terminatis crebre aspersis; pileo canescentiore, maculis similibus minoribus variegato: frontis plumis et mystacibus elongatis albis: lateribus capitis pallido rufo striatis: subtus intensius ferruginea, ventre medio cinnamomescentiore: rostri nigri mandibula inferiore ad basin flavicante: pedibus pallidis: long. tota 7·5, alæ 3·4, caudæ 3·0, rostri a rictu 1·2.

Coban, one ex. There are examples of a *Malacoptila* in the collection of the Academy of Natural Sciences of Philadelphia, U. S. A., which, according to my notes, agree with this bird. They are marked as from Vera Paz. The nearest ally of the present species is Lafresnaye's *Malacoptila panamensis*, from which it may be distinguished by the absence of any flammulations below. It is also not generally unlike *M. mysticalis* of New Grenada, but is easily distinguished from it by its rufous tail.—P. L. S.

Fam. TROGONIDÆ.

67. *Trogon mexicanus*, Sw. sp. 215.

Volcan de Fuego. The colour of the eyelid of this species, both in the male and female, almost exactly corresponds with the red colour of the breast in each, that of the male being much more brilliant than that of the female, in fact bearing the same ratio to it as the colour of its breast to that of the female's breast. It is probable that in many cases the colour of the soft parts about the eye, &c., may be determined by reference to some portion or portions of the plumage where it is exactly represented. In the Trogons this seems eminently the case. A few days ago I shot a pair of *Trogon caligatus*, in which the colour of the eyelid of the male was exactly represented by the colour of the yellow breast; that of the female by the fainter yellow of its breast. The same is the case with *T. puella*. I think, therefore, that with tolerable safety the eyelids of these American Trogons may be said to correspond with the colour of the breast. It certainly is true in all cases which I have noticed. As regards the theory itself, though of course there must be many exceptions, I may here state that the colour of bare skin round the eye of *Aulacorhamphus prasinus* is exactly repeated in the undertail coverts, that of *Ramphastos carinatus* in the throat, the blue being repeated in the colour of the legs. This practice of referring the colours of the soft parts to the permanent colours of the plumage may occasionally be employed with great advantage.

On the 24th July Mr. Wyld and I set out for Calderas, a locality in the Volcan de Fuego well known to my friend as a favourite resort of many birds not found in the lower districts. We started at six o'clock in the morning, intending to reach our destination at an early hour, but I found so much to attract attention on the road, that it was past noon ere we arrived at the haunts of the Quesal (*Pharomacrus paradiseus*), to obtain which was the chief object of our ride. Leaving Mr. Wyld to make a sketch of a magnificent isolated tree of the celebrated Hand-plant (*Chirostemon platanoïdes*), I struck up the mountain, keeping near to the edge of a deep ravine, or, as it is called here, "barranco," to serve as my guide. What a contrast are these elevated forests to those of the coast! The lofty trees, it is true, correspond, but how different the vegetation, how different the climate! Instead of the incessant noise and buzzing of myriads of insects, insect life seems almost extinct, and a dead silence reigns, broken only by an occasional gust of wind. It is the region of mosses, and every tree, every branch is covered with clustering and pendent mosses*. Everything reeks with moisture, the sun being shut out from penetrating below by the closing tops of the trees. The soil in this region of perpetual damp is of the richest quality, its excellence being testified as well by the mouldering ranks of the fallen trees as by the luxuriant growth of a species of bamboo. It is no easy matter to ascend; the fallen trees and the dense jungle of bamboos render the path tortuous and difficult; "barrancos" too, innumerable sweep the mountain on all sides, rendering considerable care necessary to keep to the one chosen as the guide.

One would think that to ascend a mountain and descend again were easy enough, and so it is; but to return to the same place by the same road is another matter altogether. The forest entirely shuts out the view of the surrounding country, and consequently landmarks are not available. One ravine is exactly like another: they begin and end almost without one being aware of it. Nothing is easier than to strike a fresh path and to take a new guiding "barranco," instead of the one first chosen.

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* Are not these rather epiphytous *Tillandsiæ*, belonging to the natural family *Bromeliaceæ*?—Ed.

A wide detour to reach the horses or a night passed in the forest may be the consequence of a mistake. From the commencement of the lofty trees one seems to be leaving the ornithological world, and few birds are to be seen or heard; but the hour of our visit was ill-chosen, the morning and evening being the times when the feathered denizens of these forests show themselves in greater numbers. It was here, however, that I saw *Lamprolæma rhami*, and a little lower down *Selasphorus heloisæ*, two species of Humming-birds not easily matched for brilliancy, even by members of their own family. It was here that the first specimen of the *Oreophasis derbianus* was shot, Mr. Wyld being present on the occasion. Here occurs *Trogon mexicanus*, and last, but not least, *Pharomacrus paradiseus*, the emblem of royalty in the times of the old monarchy of Quiché. I was not fortunate enough to see this most brilliant of Trogons, but in the region here described it certainly does occur, though perhaps sparingly. I cannot speak accurately of the elevation of this forest, but, if I may hazard a conjecture, I should say that *Chirostemon platanoïdes* begins to replace the evergreen oaks at about 7000 feet above the sea-level, and that the forest where that tree forms the most marked feature extends to perhaps an elevation of 10,000 or 11,000 feet, it then being itself succeeded by pines.

Fam. CUCULIDÆ.

68. *Piaya thermophila*, Sclater, P. Z. S. 1859, p. 368: sp. 224.

Coban and Yzabal. This species has a wide climatic range. I have observed it at an elevation greater than that of Dueñas. The same remark applies to *Geococcyx affinis* and *Crotophaga sulcirostris*.

69. Coccyzus americanus (Gm.): Baird, Rep. p. 76. N. A.

Coban.

Fam. PICIDÆ.

70. *Centurus pucheranii* (Malh.): sp. 235.

Coban and Yzabal.

71. *Chloronerpes yucatanensis*, sp. 239.

Coban. Seems to agree with Mexican specimens.

Fam. PSITTACIDÆ.

72. Conurus holochlorus, Sclater, Ann. and Mag. N. H. (1859), ser. 3, vol. iv. p. 224.

Coban and Dueñas. This Parrot is known as 'El Chocoyo.' At this season it frequents the patches of Maize (*Zea mais*), which cover the hill-sides, and commits serious damages on the crop. It may constantly be seen flying over the plains and low country at all hours of the day in flocks varying from two birds to twenty or thirty in number. When any large number fly together, they usually, I may say almost always, divide themselves into couples, though these do not preserve regular order like a flock of Geese.—O. S.

73. Psittovius tovi (Gm.).

Coban. This little Parrot extends into New Granada. I have seen examples from Cartagena, and it occurs in Bogota collections. It is readily distinguishable from its near ally *Psitt. jugularis*, of the Upper Amazon, by its pale yellow under-wing coverts. —P. L. S.

74. Chrysotis guatemalæ, Hartlaub, in Mus. Bremensi. *Chrysotis*, sp. 250, Sclat. et Salv. Ibis, 1859, p. 138.

Læte viridis: pileo cyanescente: primariorum parte terminali nigricante: secundariorum pogoniis externis ex magna parte coccineis, inde purpurascentibus: caudæ vitta lata terminali flavicante: rostro corneo, pedibus fuscis: long. tota 14·0, alæ 9·0, caudæ 4·5.

Hab. in Guatemala et Honduras.

Having observed a second specimen of this *Chrysotis* in the Bremen collection, I have been induced to describe it under the MS. name given to it by Dr. Hartlaub.—P. L. S.

Fam. FALCONIDÆ.

75. *Geranospiza cærulescens*, sp. 277.

Found in a forest of low trees near Dueñas. In the stomach were remains of a small mammal. Iris burnt-sienna, the outer portion being lighter-coloured: legs blood orange: cere black.

76. *Urubitinga anthracina,* sp. 263.

Dueñas, July, changing from immature to adult plumage.

Fam. COLUMBIDÆ.

77. *Chamæpelia passerina*: sp. 313.

I have found nests of this bird both on the ground and elevated a few feet above it.

78. Scardafella inca, Bp. Consp. ii. p. 85.

Dueñas, July 19th, ♂.

This is the first and only specimen I have met with of this Ground-dove at Dueñas. On the coast it is numerous, resembling in its habits the common species of this district, *Chamæpelia passerina.*

Fam. ARDEIDÆ.

79. *Butorides virescens,* sp. 333.

I have noticed two other species of Heron about the Lake of Dueñas, but this is the commonest.

Fam. RALLIDÆ.

80. *Fulica americana* (Gm.), sp. 361.

A young bird in its first dress. The Coot of the Lake of Dueñas appears to be the *F. americana,* after all, as I have noticed that the old bird has a spot of the colour of dried blood above the white frontal plate. In the young bird the bill is vermilion-red with a lighter spot next to the white point on the upper mandible. Over the eye is blue, the colour of the eye-ball evidently showing through. The legs are brown with a faint cast of green.—O. S.

VI.—*The Ornithology of Amoy* (China). By Robert Swinhoe, of H. M. Consular Service.

As I am about to leave Amoy for a place further down the coast, a short notice of the species of birds collected by me on this island and its immediate vicinity during a five years' sojourn would perhaps find an acceptable place in 'The Ibis.'

The position of Amoy and its relative bearings to the mainland of China may be ascertained from any ordinary map; a few words will therefore suffice to explain the nature of the country in which I have followed my loved pursuit. This island, the neighbouring shores of the mainland, and the banks of both the rivers (the larger one leading to Changchow Foo and the smaller to Tunggan Hien), are all densely populated, and have remarkably little wood, except occasional Banyan-trees interspersed amidst the villages. The plains are well cultivated with rice, maize, sugar-cane, *Cucurbitaceæ*, and hemp, during summer, and during winter with bearded wheat, spinach (*Basella rubra*), taro, cabbage, &c. The hills are either composed chiefly of granite débris, studded with huge black blocks of granite, and extremely barren; or of clay, and covered with small stones and scanty herbage. This character of the country will probably account for the paucity of our resident species among *Land-birds* as compared with the occasional visitants or stragglers in the same group. The *Water-birds*, however, show a finer list, no doubt, owing to the suitable feeding-ground afforded them by the large mud-flat of the Amoy Creek, those of several other inlets and creeks into the mainland, and the marshes at the mouths of the rivers.

In identifying the following birds, Mr. Blyth of Calcutta has rendered me infinite service; indeed, without his valued aid, I could have done little among the non-European forms. I have also to thank Mr. Stevenson of Norwich for the help he has kindly afforded me.

1. BUTEO JAPONICUS, Bp.

A regular winter visitant, and often seen in pairs.

2. PANDION HALIAËTUS (L.)?

Lives on the rocks at the mouth of the harbour, and comes occasionally to Amoy; very shy and unapproachable. I have never been able to procure a specimen.

3. FALCO PEREGRINUS, Linn.

Breeds in the neighbourhood, on the high hill of Lamtaiboo, and is not unfrequently seen.

4. HYPOTRIORCHIS SUBBUTEO (L.).

Occasionally seen during winter; rare.

5. **Tinnunculus alaudarius** (Briss.).

Resident all the year; several pairs build on the Amoy rocks.

6. **Milvus govinda**, Sykes.

Very common in the harbour during winter, and living off the offal thrown from ships. In the summer the majority retire to breed on a small island called Pagoda Island, about six miles from the town. I have counted as many as sixty Kites over this locality, and found several nests in a single evening's stroll. They are generally placed on a ledge of rock; but I have also found them on trees.

7. **Accipiter** —— ? (probably *Falco badius*, Gmel.).

Differs from the European bird (*A. nisus*) in having white *axillæ*, as well as in many minor points. Occasionally seen during winter.

8. **Circus cyaneus** (Linn.).

Occurs sometimes during winter.

9. **Circus æruginosus** (Linn.).

Of frequent occurrence in the neighbourhood.

10. **Athene scutellata** (Raffles).

An occasional winter visitant; found also in summer at Fouchow.

11. **Bubo maximus**, Fleming.

Occasionally seen of a winter's evening; builds somewhere in the neighbourhood, as every spring the young are sold in the streets of the town.

12. **Scops bakkamœna** (Penn.).

Rare. I procured two the same winter, one mottled brown on the upper parts, the other mottled buff; the first I take to be the immature plumage. Mr. Blyth informs me that this is a numerous species in the vicinity of Calcutta.

13. **Caprimulgus** —— ?

14. **Caprimulgus** —— ?

One species of *Caprimulgus* occurs at Amoy during the months of September and October. It is closely affine to *C. indicus* (Gmel.); but not having had an opportunity of comparing skins, I am unable to state the identity of the two. Another species is found up the river towards Changchow during the same months, and is remarkable for having naked tarsi. It is smaller than the one that visits Amoy.

15. Cypselus vittatus, Jard. & Selb.

Frequent in spring, flying high in fine weather, but darting about low during rain; does not nestle here.

16. Cypselus affinis, J. E. Gray.

A permanent resident, associating in parties that twitter together, and then disperse, darting about the sky in all directions, after a time again assembling. Thus they continue on wing the greater part of the day. They build their nests under the rafters of verandahs, shaped like those of the House-martin (*Chelidon urbica*), but composed of straw and other soft materials glued together in regular strata. In these nests the birds roost the year through.

17. Chætura nudipes, Hodgs.

A straggler in spring during rain-storms.

18. Hirundo gutturalis, Scop.

This bird looks merely like a degenerate variety of the European species. It is a summer visitant here and pretty numerous, building mud nests, lined with straw and a few feathers, over the doors of Chinese hovels. The natives protect the Swallow, as they believe that good luck attends it.

19. Hirundo daurica, Linn.

A few passing flocks spend a day or two in Amoy during winter. A few build on the mainland; but in Formosa it is common, and takes the place of the ordinary species.

20. Eurystomus orientalis (Linn.).

Very rare.

21. Halcyon smyrnensis (Linn.).

A common resident, called in Chinese "Fei-tsuy." Many of its feathers, chiefly those of the wing, are cut up into bits and glued over ornaments worn by Chinese ladies, giving the appearance of turquoise stone.

22. Halcyon pileata (Bodd.). (*A. atricapilla,* Gmel.)

Rare. The feathers of this are used for the same purpose as those of the foregoing, and give a deeper tone to the ornaments. I have not had the opportunity of comparing this with skins from other parts, so I am not quite sure of the species.

23. Alcedo bengalensis, Gmel.

A very common resident.

24. Ceryle rudis (Linn.).

Very common on the river, where it is to be found at all seasons; poises on the wing at a height above the water, and drops suddenly down to catch its prey. I have however seen it strike obliquely when flying close to the surface of the water.

25. Upupa epops, Linn.

Resides all the year, but not common; nestles in the holes of walls, and of exposed coffins, and hence called by the natives the "*Coffin-bird.*"

26. Orthotomus phyllorrapheus, n. sp.

This species is probably new, as it does not correspond to any described by F. Moore in his Monograph of the genus, read before the Zoological Society in February 1854. I extract from my journal the description of a male shot on the 22nd of February. Length 4·5 inches, wing 1·9, tail 2; bill along culmen ·5, to gape ·7; tarsus ·8. Bill pale flesh-colour, dark hair-brown along the culmen. Legs and toes pale yellowish brown. Iris buff; a narrow circle round the eye pale yellow. Forehead ferruginous, gradually changing to olive-brown on the head. Back bright olive-green. Wings and tail hair-brown, the coverts margined with olive-green, the quills with yellowish olive-brown. Round the eye and all the under parts, including the shoulder-edge, ochreous white, darker on the flanks, and buff on the tibiæ. The two central tail-feathers of the male gradually lengthen until May, when they are about an inch and a half or so longer than the others, which are all somewhat graduated. I observe that those lengthened feathers soon become worn, and usually drop after the first nesting, to be replaced by others only slightly longer than the rest.

This bird is found in all the gardens, hedgerows, &c., and is generally seen in pairs. The tailoring habits of the genus are well known. Mr. Blyth remarks, "Your *Orthotomus,* I think, is new, and constitutes the twelfth species (!) now recognized."

27. Prinia sonitans, n. sp.

I have given the above name from the crackling noise the bird produces when hopping or flying from twig to twig. A male, shot the 9th April, I have thus described:—Length 5·3, wing 1·7, tail 3; bill ·45, to gape ·5; tarsus ·8. Bill and inside of mouth black. Irides orange yellow. Legs buff-colour, browner on the claws. Head fine deep bluish grey. Chin and cheeks white. Occiput and back olive-green, blending with the grey towards the forepart and becoming tinged with sienna on the rump. Wings light hair-brown, magined with buff olive-green. Tail pale brown, margined and tinged with buff olive-green. Breast pale clear buff, tinged with primrose, deepening on the under parts, and very deep on the thighs. The female has the head less bluish than the male.

It is a common resident here and at Fouchow; it builds oval nests and lays seven strangely red eggs. Mr. Blyth says—"Your *Prinia* from Amoy comes exceedingly close to *P. flaviventris* (Deless.), which is common in the Bengal Sunderbunds, Tenasserim, &c., and which I have received also from Singapore; but yours has a longer tail, wants the bright yellow of the lower parts below the breast, and there is an admixture of white in the loral regions and ear-coverts, not seen in our species."

28. Drymoica extensicauda, n. sp.

This bird delights in fields of standing grain, long grass, &c., and is often seen standing on a high stalk with its tail thrown up, at the same time twittering a sharp series of unmusical notes. The following description is taken from a male, shot on the 9th of April:—Length 5·1; wing 1·9; tail 2·5 long, and graduated, the outermost feather measuring 1·3; bill ·4, to gape ·6; tarsus ·7. Bill deep blackish brown, paler just at the tip, yellowish flesh-colour at the base of the lower mandible. Inside of mouth pale flesh-colour. Iris orange-yellow; margin of eyelids buff. Legs yellow ochreous, flesh-colour on the upper surface of the toes. Upper parts olive-brown. Region of the eye, curve of wing, and tibiæ buff-ochre. Under parts pale ochreous with a tinge of primrose-yellow. Wings and tail light hair-brown; the feathers of the former margined with olive-tinged yellowish brown on the coverts, and reddish on the quills; those of the latter indistinctly varied with a darkish shade.

"Your *Drymoica* is nearly affine to the common *D. fusca* of Bengal, Nepal, &c., represented by *D. inornata* in Southern India; but has a conspicuously longer tail, is more decidedly rufescent on the lower parts and around the eye; and the crown is distinctly striated, in which last respect it approximates to the *Cisticolæ*."—Blyth.

29. Cisticola tintinnabulans, n. sp.

This bird is of very rare occurrence in Amoy, but is frequent near Shanghai and in Formosa. I have described it as *Calamanthella tintinnabulans* in the 2nd vol. of the Journal of the North China Branch of the Asiatic Society. It jerks itself about high in the air while uttering its strange tinkling note.

30. Acrocephalus magnirostris, n. sp.

This bird abounds from Amoy to Shanghai in all reed-covered places, and has a powerful musical voice. I take it to be the same bird as that described in the 'Fauna Japonica' as *Salicaria Turdus orientalis*. Mr. Blyth says: "Of your *Acrocephalus* it may be remarked that (like the two figured in Gould's 'Birds of Australia') it helps to fill up the gap between the large and small species of Europe and India respectively; and that it is remarkable for the great, disproportionate size of the bill, which equals that of the European *A. arundinaceus* (Linn.), or of the Indian *A. brunnescens* (Jerd.), both of which are much larger birds." Length 7·2; wing 3·1; tail 3, graduated; bill ·8, to gape 1·1. Upper parts sienna or yellowish brown; wings brown, margined with the same; tail do. and tipped with yellowish grey; eye-streak and throat yellowish white. Under parts sienna yellow, with more or less white.

31. Acrocephalus bistrigiceps, n. sp.

This is a much rarer bird than the foregoing, and may have been previously described; but I have not yet been able to identify it. It may easily be distinguished by a line of black over a yellowish streak above each eye. Length 5·25; wing 2·3; tail 2·1, graduated; bill ·5, to gape ·6. Upper parts olive-brown, tinged with sienna, redder on the rump and edgings of the tail; wings hair-brown, margined with the prevailing colour. Throat, belly, and under wing-coverts whitish; the rest of the lower parts deeply washed with sienna buff.

32. ARUNDINAX CANTURIANS, n. sp.

A winter species in Amoy, but found in summer at Shanghai uttering its notes, which are so rich and full as to make the hearer expect a fine song coming. But, alas! these three or four notes are all that the bird possesses; and, though you strain your ear in listening, from the same bush you hear at intervals the same few rich notes.

Mr. Blyth observes on a skin sent him—"This seems very like a second species of my genus *Arundinax*. The tail, however, is obscurely striated across, which I do not perceive in my *A. olivaceus*; and your bird has also a much stronger hind toe and claw, quite disproportionately so as regards the anterior toes. The white of its wings underneath is remarkable. The tail is less graduated than in *A. olivaceus*."

It is probable that this may be *Salicaria cantillans* of the 'Fauna Japonica.' Length 6·5; wing 2·8; tail 2·9; bill ·5, to gape ·8; tarsus 1·1, middle toe ·85; hind toe ·65. Forehead and crown of the head rufous brown. Upper parts and tail olive-brown. Wings hair-brown with yellowish brown margins. Throat, under wing-coverts, and belly white. Eye-streak and remaining under parts ochreous grey. Bill and feet brownish.

33. ARUNDINAX MINUTUS, n. sp.

This is a most singular miniature of the foregoing bird, resembling it almost exactly in colour, but differing considerably in size. Length 5; wing 2·2; tail 2·1; tarsus ·85; middle toe ·7, hind toe ·5. This bird is also more robust in build, and is much rarer as a winter visitant here. The disproportionate size of the hind the is not so conspicuous as in its congener.

34. Phylloscopus fuscatus, Blyth.

Common during winter, and stays so late in spring that I have a strong suspicion that it nidificates in the neighbourhood. It entertains us during the early vernal months with its pretty shake song; but its most frequent note is "chick-chick."

35. Phylloscopus sylvicultrix, n. sp.

Mr. Blyth, on a view of this bird, pronounced it "a new species, differing from all but the European *sibilatrix* in the minute size of its first primary, in which character, however, *sibilatrix* exceeds it." This species is very numerous here in the months of April and May, but leaves us to breed. Length 4·5; wing 2·5, 1st quill ·5, 2nd 1·75, 3rd and 4th 1·9; tail 1·7; bill ·5, to gape ·65; tarsus ·75. Upper mandible brown, with a yellow edge; lower yellow, with a patch of brown on the terminal half. Legs pale yellowish brown, yellower on the under surface of the toes, and browner on the claws. Upper parts olive-green, brownish in some lights, especially on the crown. Line over the eye, a row of feathers on the lower half of the circle round the eye, and part of the cheeks pale chrome-yellow. Space between the bill and eye blackish olive. Feathers of the wings and tail hair-brown, broadly margined with olive-green, and having a spot of yellowish white on the tip of the outer web of the five first secondary coverts. Under parts pale yellowish or primrose-white, varying in depth of tint. The under shafts of all the tail-feathers white, and the margin of the inner webs of the three outer tail-feathers faint white. The size of the bill varies a good deal in different individuals.

36. Phylloscopus tenellipes, n. sp.

This species has very delicate light pink-coloured legs and feet. Crown of the head, and a streak between the bill and eye produced over the ear-coverts, blackish olive-brown. Eye-streak yellowish. Upper parts buff-olive. Under parts pure white, except the flanks and under tail-coverts, which are buff, and the under wing-coverts of a primrose-yellow. Culmen of bill dark brown, the rest pale pinkish yellow. This is a straggling visitant during the cool weather.

37. Phylloscopus coronatus (Temm. & Schleg.).

This species is noticeable from having a faint line of yellow on the crown, like a *Regulus,* and is probably the species described under the above name in the 'Fauna Japonica.' It is sometimes met with in small parties during spring.

38. Reguloides proregulus (Pall.). (*R. modestus,* Gould; *R. inornatus,* Blyth.)

Winters here, and is of solitary habits. Identified by Mr. Blyth, who remarks—"Common here (Calcutta) in the cold season. When newly moulted, has a pale median line along the crown."

39. Reguloides chloronotus, Hodgs.

Identified by Mr. Blyth as the Himalayan species. Often seen during winter here in pairs, going about from tree to tree in search of insects.

40. Copsychus saularis (Linn.).

A common resident. Native name, "Chuy-kam-chay."

41. Pratincola indica, Blyth.

Winters here.

42. Ruticilla aurorea (Pall.).

Winters here. A second species occurs, of which I have only one female, and have therefore not been able to identify it.

43. Nemura rufilata, Hodgs.

Winters here.

44. Thamnobia niveiventris, n. sp.

This is a lively Chat-like bird, but has a habit of jerking up the tail like a robin and exhibiting the pure-white anal feathers. Length 5·2, wing 2·8, tail 2·1, bill ·25. Upper parts greyish brown; under parts greyish tinged with buff, especially on the under wing-coverts. Lower belly and vent pure white. Wings greyish brown, with broad buff tips to the secondary coverts, forming a transverse bar across the wing; quills edged with light buff brown, and most of them tipped whitish. Tail black, the three outer feathers having the basal two-thirds white. Bill and legs black.

This species is a winter visitant, but not common here.

45. **Parus minor**, Temm. & Schleg.

Mr. Blyth tells me that the species prevalent from Hong-kong to Shanghai is not *P. atriceps*, but most probably *P. minor*, lately figured in the 10th Part of Gould's 'Birds of Asia.'

46. **Zosterops japonicus**, Temm. & Schleg.

This is most probably the same species as that of the 'Fauna Japonica.' It is resident on the mainland, and visits Amoy occasionally in small troops.

47. **Motacilla boarula**, Linn.

A common winter visitant.

48. **Motacilla luzoniensis**, Scop.

Common in winter; a few breed here. Length 7·3, wing 3·5, tail 3·5.

49. **Motacilla ocularis**, n. sp.

Distinguishable from the foregoing by a permanently grey back, larger size, and a *black line* running through the eye, past the ear-coverts. Length 7·8, wing 3·7, tail 3·8. On the other hand, the bill and the head are smaller.

50. **Budytes flava** (Linn.).

I think this is the species; it is certainly not *B. citreola*. It is of rare occurrence here.

51. **Anthus thermophilus** (Hodgson).

Identified by Mr. G. R. Gray of the British Museum. Common during winter.

52. **Anthus agilis**, Sykes.

Common during winter.

53. **Anthus richardi**, Vieill.

Common during winter.

54. **Myiophonus horsfieldii**, Vigors?

Lives among rocky caverns, and is very shy. Its native name is "Aw-chuy." I have marked the name with a query because I have not been able to compare our bird with others referred to that species*.

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* It is probably distinct, and should be called *M. cæruleus* (Scop.), being the *Merle bleu de la Chine* of Sonnini.—Ed.

55. Turdus daulias, Temm., Faun. Japon.

This is our commonest winter thrush. A few are occasionally found together, though the bird is not gregarious. One, shot the 23rd February, is described as folows:—Length 9·2; wings 4·9; tail 3·5; bill ·8, to gape 1·1. Upper parts rich olive-brown, paler on the breast and flanks of lower parts, and greyish on the cheeks. A spot under the eye, chin, and throat white, the latter speckled with olive-grey. Belly and under tail-coverts white, the last blotched with olive-brown. Bill: upper mandible black, edged with yellow; lower mandible, inside of mouth, and skin round the eye chrome-yellow. Legs pale liver-brown. Quills hair-brown, margined on the outer webs of the four foremost with white. Tail hair-brown, margined with olive-green, the two outermost feathers having large spots of white on the inner webs towards the tip, and the 3rd feather only a small spot. In spring, the head, neck, breast, and flanks become deeply tinged with bluish grey, varied with more or less white in different individuals.

56. Turdus pallens, Pallas. (*T. pallidus*, Gm.).

Not unfrequent during winter.

57. Turdus chrysolaus, Temm. & Schleg. Faun. Japon.

This handsome species is closely allied to our *T. advena* in size and shape; but the red that marks its plumage is a sure distinction. Small parties of this bird arrive in early spring, but they make short sojourn with us.

Four other species of *Turdus* occur during the winter; but, as I have no duplicates, I have not had the means of identifying them.

58. Turdus mandarinus, Bp.

Identified by Mr. G. R. Gray. A common resident, and very abundant from Amoy to Shanghai.

59. Oreocincla aurea, Bp.

A straggling visitant. Number of rectrices fourteen

60. Petrocossyphus manillensis (Bodd.).

A common resident among the rocks.

61. GARRULAX RUGILLATUS, n. sp.

This large Butcher-thrush is found among bushes on the hills of the mainland here, and is of common occurrence also at Fouchow; I have more than once found the remains of small birds in its gizzard. Length nearly 1 foot; wing 4·7 inches; tail 5·2; bill ·9, to gape 1·3. Back, wings, and tail yellowish brown. Head and neck yellowish grey. A band of black reaches from one ear-covert, over the forehead, to the other, forming a broad mark over the eyes. Under parts pale rufous ochre, but very deep on the vent. Beak and legs brown.

62. ORIOLUS CHINENSIS, Linn.

A rare straggler here, but very common in S.W. Formosa. The female is slightly greener than the male on the back and wings, and is considerably larger. Another species, not found here, I have received from Mr. Holt at Fouchow. It has a spotted breast.

63. PYCNONOTUS SINENSIS, (Gmel.). (*Turdus occipitalis*, Temm.)

Very common all over the coast from Hong-kong to Shanghai, and everywhere in Formosa.

64. PYCNONOTUS HÆMORRHOUS (Gmel.).

Found abundantly in some places in this neighbourhood, but particularly local, seldom straying far.

65. TCHITREA PRINCIPALIS, Temm.

A rare spring straggler; identified by Mr. G. R. Gray.

66. TCHITREA CÆRULEOCEPHALA (Quoy et Gaim.)??

Rare, and not identified.

67. HEMICHELIDON LATIROSTRIS (Raffles).

(*Muscicapa cinereo-alba*, Temm. and Schleg., Fauna Japon.)

A common winter visitant. The former name identified by Mr. Blyth, the latter by Mr. Stevenson.

68. HEMICHELIDON FULIGINOSA, Hodgs.

A rare spring visitant.

69. HEMICHELIDON RUFILATA, n. sp.

This species approximates to *H. latirostris* in form, but has a bill broader at the base. It is a rare spring visitant here.

Length 4·7; wing 2·9; tail 2; bill ·4, to gape ·6, breadth of gape ·35; tarsus ·5. Head and upper part of neck blackish grey. Back and scapulars reddish brown. Wings blackish brown, margined with burnt sienna. Rump and tail tile-red, the feathers of the latter more or less marked with blackish. Throat and fore neck white, yellowish on their sides. The rest of the lower parts (excepting just the abdomen, which is white) reddish or burnt-sienna ochre, more or less intense.

70. XANTHOPYGIA NARCISSINA (Temm.). (*X. chrysophrys*, Blyth.)

A rare spring visitant.

71. NILTAVA CYANOMELÆNA (Temm.), Faun. Japon.

A rare spring straggler.

72. CAMPEPHAGA CINEREA (Blyth)?

Of a deep bluish grey, with green-black wings and tail; the feathers of both tipped more or less with white, the graduated tail-feathers deeply tipped. Vent white. Bill and legs black. Length 9; wing 4·5; tail 3·7. This species occasionally shows itself here in spring and in autumn.

73. PERICROCOTUS CINEREUS, Lafr. Rev. Zool. 1845, p. 94. (*P. motacilloides*, mihi.)

A female of this, or of a nearly allied species, appears to have been described under the name *P. cinereus*. During the spring a numerous party of these birds arrived, and stayed with us for several days, the females exceeding the males in number about five or more to one. The crops of those dissected contained caterpillars and eggs of the large yellow bug (*Tesseratoma delessertii*). These birds had a very pretty thrilling note, like that of the Canary, only much louder. When the flock was disturbed, it would rise high, flying round and round in large circles, gradually ascending, the individuals that composed it rising and falling at irregular intervals, and constantly uttering their notes. Suddenly, with a sweep, they would all descend into some tree, and, settling at first on the top, would soon afterwards disperse among the boughs to search for food. They were so foolishly tame, that at the report of a gun they only hopped on to another branch, though they witnessed the fall of one or more comrades. Here is the description given by De Lafresnaye:—"Cendré en dessus; lorums, ailes et queue noirs; front, une tache médiane alaire, pli de l'aile, bord extrême des rémiges tertiaires, la presque totalité de trois rectrices latérales et tout le dessous de corps, blancs. Longueur totale $0^{m}\cdot193$. Habite l'île de Luçon (Philippines)." The female in all mine has *greyish-brown* wings; the black of the lores extends over the beak; and *four,* instead of *three,* lateral rectrices have a good deal of white on them. Length 8; wing 3·8; tail 4, the three outer feathers being shorter than the rest, equally graduated, measuring $1\frac{1}{2}$, 2, and $2\frac{1}{2}$ respectively, the six central ones nearly equal; expanse $10\frac{1}{2}$, bill $\frac{1}{2}$, to gape ·8. Bill and feet black.

The male has a broad white forehead and a black crown, which gradually blends with the bluish grey of the back; the wings are also blacker; and there is more grey on the sides of the breast. In fact the plumage of the male has great affinity to that of the wild *Motacillæ,* and also forms a happy transition from the grey *Campephagæ* to the crocus-tinted *Pericrocoti* *.

74. DICRURUS MACROCERCUS (Vieill.).

A summer visitant, but by no means common at Amoy. Remarkably common in S.W. Formosa, where several may be seen sitting on nests in the same bamboo-tree.

75. LANIUS SCHACH, Gm.

A common resident. Has a great habit of shrieking.

76. LANIUS LUCIONENSIS, Linn.

Identified by both Mr. Blyth and Mr. Stevenson. The former observes: "This is decidedly the true *L. lucionensis.* Strickland (Ann. & Mag. N. H. 1847, xix. p. 132) considers that all the various allied races are only varieties of the same. My notion is, that there are three or four cognate races, which may breed together when circumstances permit of it, and so grade into one another. Unquestionably a Malayan *L. superciliosus* is very unlike *L. lucionensis.*"

This is a common visitant with us.

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* There seems to be no doubt of this bird being *P. cinereus.* It is figured in Gould's 'Birds of Asia,' pt. ix.—ED.

77. **Lanius bucephalus**, Temm. & Schleg.

I have met with but one of these birds here. It had a large rufous head, without the usual black face-band of the genus.

78. **Corvus pectoralis**, Gould.

The common Crow here. A permanent resident.

79. **Pica sericea**, Gould.

Very common. Roosts in company in large trees, whence parties sally every morning to the country round for food; at nightfall they all return again, cackling, curveting, and performing sundry antics in the air. They are much admired by the natives for their lively habits, and are called by them the "Birds of Joy."

80. **Acridotheres cristatellus** (Linn.).

A very common species from Hong-kong to Shanghai. Builds in holes of trees or walls, or makes large oval nests in high trees. Learns to speak with facility, and soon becomes docile in confinement.

81. **Gracupica nigricollis** (Paykull). (*Pastor temporalis*, Temm.; *P. bicolor*, J. E. Gray.)

A common resident, generally seen in pairs, but also associating in small parties. It is a very noisy bird. It builds a magpie-like nest on high trees, and lays three pale-blue eggs. It is found also in Siam.

82. **Temenuchus turdiformis** (Wagler). (*T. sinensis*, Gmel.)

A common summer visitant. A very restless bird. It builds in holes of walls. It is found also in Pegu.

83. **Temenuchus sericeus** (Lath.).

Identified by Mr. Blyth. A winter visitant; lives, while with us, chiefly on Banyan-berries.

84. **Temenuchus cineraceus** (Temminck).

This resembles the foregoing a good deal in form, but is broader on the back, and generally more robust. It visits us during winter, in small flocks, to devour the Banyan-berries. Length 8·7, wing 5, tail 2·8, bill 1, to gape 1·3. Bill tile-red, blackened on the apical half. Legs orange ochre, claws blackish.

Irides white. Head and neck blackish brown interspersed with a few white spots; cheeks white, more or less streaked. Upper parts liver-brown, tinged with grey. Wings and tail with a slight greenish gloss; the foremost secondaries broadly edged with white, the rest and some of the quills but slightly; the tail-feathers are extensively edged with white, and all, except the two central, more or less deeply marked with white on the apical portion of the inner web. Breast and flanks bluish grey. Under wing-coverts, belly, pygial band, and under tail-coverts pure white. The females are browner, and have little or no grey on them.

85. COCCOTHRAUSTES MELANURUS (Gmel.).

Found here the winter through, but leaves us before summer. Breeds in Shanghai.

86. MUNIA MALACCA (Linn.).

Young birds are met with in autumn.

87. MUNIA MOLUCCA (Linn.).

Found in the neighbourhood; scarce. Common at Shanghai during summer.

88. MUNIA RUBRONIGRA, Blyth.

Scarce.

89. ORYZORNIS ORYZIVORA (Linn.).

Flocks occasionally met with during winter and spring.

90. LIGURINUS SINICUS (Linn.).

A small goldfinch-like bird with a greenfinch's bill; not uncommon on the hills; has a pretty, tinkling call-note.

91. PASSER MONTANUS (Linn.).

Common everywhere about houses. Resembles in habits the house-sparrow, *P. domesticus* (Linn.).

92. EMBERIZA FUCATA, Pall.

Met with among standing grain during winter, but difficult to procure, from its habit of dropping under cover of the grain, and seldom perching in exposed places.

93. EMBERIZA PUSILLA, Pall.

Occasional in flocks during winter.

94. Emberiza canescens, n. sp.

Small flocks of these occur during winter. Male: length 5·1; wing 2·9; tail 2·5, and somewhat forked; bill ·35. Head and neck sienna grey; crown, cheeks, and throat becoming black and having a frosted appearance. Back and scapulars black, each feather broadly margined with white, and more or less tinted with reddish sienna. Wings blackish brown, broadly margined with tinted white. Under parts and rump white. Tail blackish brown, having the two central feathers broadly margined with white, the next hardly at all; outer feathers white, except a small basal portion of the inner web; the second broadly tipped with the same. The female is deeply tinged with reddish brown above and reddish ochre beneath. Her wing measures 2·7.

95. Euspiza personata (Temm.).

The commonest bunting here during winter.

96. Euspiza aureola (Pall.).

Met with in flocks in winter, feeding on the ripening corn.

97. Melophus lathami (Gray).

A common winter species. A few breed in the neighbourhood.

98. Alauda cœlivox, nobis.

I have described this as a new species in the third volume of the North-China Branch of the Asiatic Society's 'Journal;' but further and closer comparison of the bird is needed before the truth can be arrived at.

99. Yunx torquilla, Linn.

Common during winter.

100. Cuculus canorus, Linn.?

A bird of passage at Amoy, arriving in autumn and spring, and sojourning here only a few days. It breeds in Shanghai.

101. Cuculus tenuirostris, Gray.

A summer visitant; has a loud-toned whistle, repeated four times, and then terminating with a run.

102. Turtur chinensis (Scop.). (*C. tigrina*, Temm.)

Common everywhere from Hong-kong to Shanghai.

103. Turtur humilis (Temm.).

A summer visitant.

104. Turtur orientalis (Lath.). (*C. gelastes*, Temm.)

This species is closely affined to *T. meena*, but is much larger and has a black bill. It is found during the months of winter in this neighbourhood; I have also seen it in Formosa; and a specimen was given to me which had flown on board a ship outside the Madjicosima Islands.

105. Francolinus perlatus (Gmel.).

Birds of this species are brought to market by the natives from some neighbouring part of the country.

106. Coturnix chinensis (Linn.).

A winter bird here, and by no means common. Met with occasionally amongst standing corn.

107. Squatarola helvetica (Linn.).

Met with in small flocks on the river mud-flats during winter.

108. Ægialites cantianus (Lath.).

A winter visitant, associates in large flocks, and frequents the sea-coast and mouth of the river. A few stay during summer, and nestle on the mud-flats of the islands at the entrance to the harbour.

109. Ægialites pusillus (Horsf.).

Resembles *Æ. hiaticula* (Linn.). It is a winter visitant, and prefers fields of dry mould to the sea-coast. It lives in small parties, and rises with a pretty note, "teó-teó."

Another species is occasionally shot, out of mixed flocks of small sea-birds, resembling a good deal the *Æ. cantianus* in winter garb, but considerably exceeding it in size.

110. Hæmatopus ostralegus, Linn.

Occasional winter visitant.

111. Ardea cinerea, Linn.

Common during winter; flocks occasionally pass over during summer.

112. Herodias egretta (Linn.)?

A large white heron is seen occasionally in winter among the river marshes; it is not yet identified.

113. Herodias garzetta (Linn.).

The common species here all the year through; builds in heronries in large Banyan-trees.

114. Herodias eulophotes, n. sp.

This differs from *H. garzetta* strikingly in having a yellow bill, full-crested occiput, and shorter legs. It is a rare and solitary species. Length 27 inches; wing 9·25; bill from tip to gape 3·75; tarsus 3·00; naked part of the tibia about 1·75; middle toe 2·25, its claw ·25. Legs greenish black; feet olive-brown, patched in places with yellow. Bill orange-yellow, becoming flesh-coloured and purplish on the lores and round the eye. Irides pearl-white. A number of loose feathers spring from the occiput, forming a full ornamental crest, the highest ones being longest and measuring 4½ inches each, the length diminishing gradually in the lower ones. Long loose feathers also spring from the lower neck, as also from the back, whereas in *H. garzetta* they become decomposed into hair-like silky webs curling upwards at their ends. This bird appears to have considerable affinity with *H. candidissima* of N. American ornithology.

115. Herodias asha (Sykes).

One specimen shot in spring.

116. Buphus coromandus (Bodd.). (*Ardea russata*, Temm.)

Common in summer, building in flocks on Banyan-trees.

117. Ardeola prasinosceles, n. sp.

Male shot in May. Apical half of bill black, middle portion chrome-yellow, base and cere indigo-grey. Legs greenish chrome. Irides orange-yellow. Head and neck indian red, gradually changing into purple as it descends to the back. Throat, median line of under neck, belly, rump, and wings white. Back having long, loose, bluish-grey feathers, decomposed and hair-like. Lower part of the neck with feathers long and hair-like, nearly covering the blue feathers of the breast. Crest composed of two long subulated feathers 4·25 in.

long, with several shorter ones fitting into the groove on their under sides; these feathers are the same colour as the head. Now Horsfield states, in his 'Researches in Java,' that the *A. speciosa* has "in its complete dress the head above, &c. isabella-yellow with a rufous tint . . . .; colour of the back intensely black . . . .; feet dark yellowish brown . . . . The crest consists of from four to six greatly lengthened linear plumes of a very pure milk-white colour. The bill is dusky at the base."

This comparison of the adult plumage is surely convincing of the non-identity of the two birds. The immature plumage would appear to be more similar; but even here there are differences. In the Malacca species, according to Horsfield, "the wings and the tail are pure white;" in ours, they are more or less dashed with blackish. In his, "the feet, and the upper mandible throughout its whole length, are black;" in ours, the former are bright yellowish green, with brownish claws, and the bill pale liver-brown, black for ¼ inch at the tip; the naked space round the eye greenish-yellow, bluish at the base of the bill. Hence it is plain that ours is not *A. speciosa*; and, from the following remark from Mr. Blyth after comparing skins from Amoy with some of the *A. leucoptera*, it is also evident that it is perfectly distinct from the Bengal species. Mr. Blyth observes, "Yours is so exceedingly like our common *A. leucoptera* in winter dress, as to be hardly, if at all, distinguishable, but utterly unlike it in summer garb. Malacca specimens I have only seen in winter dress."

118. Ardetta cinnamomea (Gmel.).

A summer visitant.

119. Ardetta sinensis (Gmel.). (*A. lepida*, Horsf.)

Common during summer, among the bushes that line the banks of the river.

120. Nycticorax manillensis (Vigors).

Seen flying overhead during summer, in the dusk of nightfall, uttering strange croaks.

121. Platalea leucorodia, Linn.

Occasional winter visitant.

122. Numenius major, Temm. & Schleg.

Regular winter visitant. Frequents mud-flats, usually in large flocks.

123. Totanus glareola (Linn.).

Common on inland marshy ground during winter.

124. Totanus glottoides, Vigors.

Common during winter, on mud-flats at the river's mouth.

125. Totanus ochropus (Linn.).

Rare; met with by small streams of fresh water, very seldom near salt water.

126. Tringoides hypoleucus (Linn.).

The commonest Sandpiper here; found the greater part of the year on the sea-shore, mostly on rocky places.

127. Recurvirostra avocetta, Linn.

Occasional winter visitant.

128. Tringa cinclus, Linn.

Frequenting our shores in large flocks during winter.

129. Tringa temminckii, Leisl.

Found in small parties scattered over wet fallow paddy-fields in the cold season.

130. Scolopax rusticola, Linn.

A few drop on this island during the autumnal and vernal migrations, but soon resume their flight.

131. Gallinago uniclava, Hodgs.

Our commonest species in paddy-fields or on other wet ground. Retires in summer to breed.

132. Gallinago stenura (Temm.).

Also common.

133. Gallinago solitaria (Hodgs.)?

Solitary individuals found in ravines among the hills during winter. It is a much larger bird than the two above, has the tail slightly rounded and consisting of twenty nearly equally long feathers, the eight middle ones broad and terminated obtusely, the six lateral ones narrow, beginning with the first, which is a little more than ·1 inch wide, and gradually increasing towards the outermost of the eight central, which is narrower than the rest. These narrow feathers end in obtuse narrow points.

134. Porzana phœnicura (Penn.). (*Gallinula javanica*, Horsf.)

A rare spring straggler.

135. Anser segetum (Lath.).

Frequents the mouth of the river in immense flocks during winter.

136. Tadorna vulpanser (Flem.).

137. Casarca rutila (Pall.).

138. Anas boschas, Linn.

139. Dafila acuta (Linn.).

140. Querquedula crecca (Linn.).

141. Querquedula multicolor (Scop.).

All more or less common in different winters.

142. Fuligula marila (Linn.).

143. Fuligula cristata (Linn.).

Common winter Sea-ducks here.

144. Mergus serratus (Linn.).

Somewhat solitary in habits, though a common species here.

145. Colymbus glacialis, Linn.

Of frequent occurrence during winter.

146. Podiceps cristatus (Linn.).

Common in winter.

147. Podiceps auritus (Linn.).

Frequently occurs during winter.

148. Podiceps philippensis (Bonn.).

A resident species, found in large rush-covered ponds.

149. Diomedea brachyura, Temm.

150. Diomedea fuliginosa, Gmel.

Both species caught by fishermen and brought into the market for sale,—the flesh, all musk-flavoured as it is, being devoured by the omnivorous Chinaman. They go by the name of the Hai-nan-gong, or "booby of Hai-nan."

151. LARUS CANUS, Linn.

152. LARUS FUSCUS, Linn.

These two, and three other species not identified, are all winter visitants, and are most abundant in the harbour during windy or stormy weather.

153. GAVIA KITTLITZII, Bruch. (*L. melanorhynchus,* Temm.?)

Very common during winter.

154. STERNA CASPIA, Pall.

A winter visitant.

155. STERNA CRISTATA, Steph.

Nestles on some neighbouring rocky islands and in great numbers at Kelung (N. Formosa).

156. STERNA MINUTA, Linn.

Rare here; breeds in great numbers on the rock-bound coast of southern Formosa.

157. HYDROCHELIDON JAVANICA (Horsf.).

Rare.

158. PELECANUS CRISPUS, Bruch. (*P. philippensis,* Gmel.)

A few frequent the mouth of the river every winter.

159. PHALACROCORAX CARBO (Linn.).

Common in winter, assembles in flocks in spring, which leave us to pass the summer months elsewhere.

VII.—*On the Ornithology of Northern Africa.* By the Rev. H. B. TRISTRAM, M.A., F.L.S. (Part III. *The Sahara, continued.*)

[Continued from vol. i. p. 435.]

99. COLUMBA LIVIA. (Rock Dove.) *"Goomri,"* Arab.

Common in all the rocky gorges, wherever there is a little vegetation, and often met with in the cultivated patches about the oases.

100. Columba œnas. (Stock Dove.)

I shot several out of a large flock of this bird in the Dayat of Tihlremet, between El Aghouat and the M'zab country, in the month of November. This was the only occasion on which I met with it in the Sahara, but it is very common in all the wooded districts of the Atlas.

101. Turtur ægyptiacus. (Egyptian Turtle-dove.) "*Hammam,*" Arab.

It is singular that whilst the common Turtle-dove (*Turtur risorius*), so abundant throughout Algeria in summer, is never seen except on passage in the Sahara, the Palm-dove, as this species is well named, remains throughout the year, but never advances further north than the date-tree, from which it is inseparable. Among these palms it swarms to an incredible extent. Whenever we rested at an oasis it supplied us abundantly with our sole animal food. It was unnecessary to do more than take one's stand in a garden, and fire as fast as one could load the fowling-piece, till the bag was filled. Every tree had, not its pair, but several pairs. Their nests are huddled about the crest at the base of the leaves. Probably from being undisturbed, these doves are very tame, and will scarcely take flight at the report of a gun directly underneath them. At Biskra, where the French officers appreciate the excellence of their flesh, they are both wild and comparatively scarce. Their flight is less vigorous than that of the common Turtle-dove, and they do not expand their tails in the same manner. The nest of this dove is very slight, and the eggs only slightly smaller than those of its congener. I was told they have at least two broods a year.

102. Pterocles arenarius. (Common Sand-grouse.) "*El Koudhre,*" Arab.

Though less abundant than the following species, the Black-breasted Sand-grouse is universally distributed throughout the Sahara, excepting in the extreme south, where it gives place to *Pterocles senegalus.* There is much of the Plover character in the flight and manner of this tribe; and the first time I observed a covey on the wing, I took them for some large plovers, until within shot. The flocks of this species are generally smaller than those of its congener, though all the class appear to be more or less gregarious even in the breeding season, several pairs generally nesting close to each other. The *P. arenarius* is not so wary as *P. alchata,* perhaps from its upper plumage assimilating more closely to the sand in colour; but when alarmed it crouches to the ground, carefully concealing its dark breast, and does not take wing until approached very closely. Then it suddenly rises to a considerable height, and flies often to a great distance. These birds chiefly feed towards sunset, when their call-note, resembling that of a partridge, may be heard incessantly until after dark. As if to show that in some respects they are a link between *Gallinæ* and *Columbidæ,* they never lay more than three eggs, this being the invariable number of the genus. These are of a character most unlike those of any other gallinaceous bird with which I am acquainted, being extremely elongated, compressed in the centre, and exactly the same size at each end—in fact, perfectly elliptical. This character is common to the eggs of five species of *Pterocles* which I possess. The eggs are placed two in a line, and the third lengthways outside them, in a depression in the sand, without any nest. The bird in sitting, as I have observed, lies on one side, spreading out one wing to cover the eggs, thus presenting a grotesque lopsided appearance; but it is a posture for which the deep keel of her sternum admirably adapts her.

The flesh of the Sand-grouse is extremely white, but very poor and dry, without any flavour. We never discovered any mode of cooking by which it could be rendered tasty, or even palatable. I have seen both the common species thrive well in captivity, and almost domesticated in the court-yards of Arabs' houses.

103. PTEROCLES ALCHATA. (Pintailed Sand-grouse.) *"El Guett'ha,"* Arab.

Though this bird does not approach so near the verge of cultivation northwards as the former, it is far more generally abundant, and continues to occur in vast flocks in winter in the M'zab and Touarick country, where I never saw *P. arenarius.*

Its plumage is far more richly marked, and I think that on close inspection there is scarcely a bird in nature which surpasses the male *P. alchata* in richness of colouring or delicacy of pencilling. Alas, that such handsome plumage should clothe such *very* dry bones! Except during the breeding-season, it is very difficult of approach; and when packed in winter, it is vain to attempt a second shot, unless well mounted. Its flight is stronger and more vigorous than its congener's; and its sharp-pointed long wings give it all the power of a plover. It is very garrulous when on the ground, and often betrays itself by its call-note long before it can be distinguished by the eye from the surrounding sand.

Its breeding habits are exactly like those of *P. arenarius*; but its egg is of a much richer fawn-coloured tint, covered and sometimes zoned with large maroon-red blotches, while that of the other is of a paler hue, with obsolete pale brown blotches.

104. PTEROCLES CORONATUS. (Spotted Sand-grouse).

Confined to the more southern portions of the Sahara, where it supplants the first species. It is a much smaller bird. I found it only in very small companies of four or five; but this may be owing to the extreme scarcity of plants in the district where it roams. The egg is of an ashy white, with a few almost obliterated pale-brown markings.

105. PTEROCLES SENEGALUS. (Senegal Sand-grouse).

Also confined to the extreme south, but more plentiful than the last-named species. I have seen and shot it in company with *Pterocles alchata*. I obtained only one nest. The egg has a ground-colour similar to that of *P. alchata*; but it is scarcely more than half the size, and has very faint brown spots. The Arabs do not seem to distinguish between the two last-named species.

In all the family the contrast between the plumage of the sexes is very striking,—in none more so than in this species.

There is a fifth species of *Pterocles*, which I have seen near Waregla and in the Chamba country, but which I was unable to procure.

106. Caccabis petrosa. (Barbary Partridge.) *"El Hadjel,"* Arab.

Long after I imagined we had bid adieu to our familiar friend of the Atlas, I was astonished at putting up in the Wed N'ça, south of the M'zab country, a strong covey of this partridge, in a district where water is found only for three months of the year, and where vegetation is entirely confined to the narrow gorge of the Wed. The birds had evidently been reared here, and had no conception of a world beyond, for nothing would induce them to take flight towards the plain on either side; and, flesh meat being a rarity in our larder, we pursued them up and down until we obtained five birds. They were much smaller than the partridge of Algeria, the specimens I preserved being about one-third less than the average size, and the plumage of a paler and less distinct hue; reminding one in the former respect of the small Grey Partridge of the Scotch hills and the Pyrenees.

107. Coturnix communis. (Common Quail.) *"Mell'houa,"* Arab.

Occasionally met with in spring, apparently on passage.

108. Turnix africanus. (Andalusian Hemipode.)

I have some doubt whether this bird, so peculiarly a denizen of the thick scrub of the Atlas, can be reckoned in the Saharan catalogue; but French officers have assured me that they occasionally find it in the hills between Djelfa and El Aghouat. I have not met with it there myself, but so shy and solitary a bird might easily escape observation.

109. Struthio camelus. (The Ostrich.) *"N'hâma,"* Arab.

To enter upon a full history of "the pride of the Desert" would be out of place here, especially if the tales of the Arabs were incorporated in its annals. Unfortunately there is but little opportunity for testing from personal observation the truth of the characteristics attributed to the Ostrich by the natives, who ascribe to it a strange mixture of sagacity and simplicity. The capture of the Ostrich is the greatest feat of hunting to which the Arab sportsman aspires, and in richness of booty it ranks next to the plunder of a caravan. But such prizes are not to be obtained without cost and toil, and it is generally estimated that the capture of an Ostrich or two must be at the sacrifice of the lives of two horses. So wary is the bird, and so open are the vast plains over which it roams, that no ambuscades or artifices can be employed, and the vulgar resource of dogged perseverance is the only mode of pursuit. The horses to be employed undergo a long and painful training, abstinence from water and a diet of dry dates being considered the best means for strengthening their wind. The hunters set forth with small skins of water strapped under their horses' bellies, and a scanty allowance of food for four or five days, distributed judiciously about their saddles. The Ostrich generally lives in companies of from four to six individuals, which do not appear to be in the habit, under ordinary circumstances, of wandering more than twenty or thirty miles from their head-quarters. When descried, two or three of the hunters follow the herd at a gentle gallop, endeavouring only to keep the birds in sight, without alarming them or driving them at full speed, when they would soon be lost to view. The rest of the pursuers leisurely proceed in a direction at right angles to the course which the ostriches have taken, knowing by experience their habit of running in a circle. Posted on the best look-out they can find, they await for hours the anticipated route of the game, calculating upon intersecting their path. If fortunate enough to detect them, the relay sets upon the now fatigued flock, and frequently succeeds in running one or two down, though a horse or two generally falls exhausted in the pursuit. The Ostrich, when overtaken, offers no resistance beyond kicking out sideways. A skin in full plumage is worth on the spot from 40 to 100 Spanish dollars; but the Arabs are in the habit of judiciously thinning the feathers, so that the trader can rarely obtain a specimen on which this tax has not been paid.

I have frequently seen the Ostrich domesticated without being in captivity. The Bey of Tuggurt kept several in a large courtyard where they had free egress and ingress, but they showed no inclination to escape. They lived in very good fellowship with the numerous horses, asses, and camels of the establishment, but had an admitted precedence, and would stretch their long necks over the shoulders of any of their companions and select corn or dates from the nosebag. If any spirited colt or grumbling camel showed an inclination to resist, a side kick in the ribs very soon brought him to submission. To strange horses they exhibited a decided aversion, and would walk quietly alongside one, and then suddenly strike out with one leg at right angles to their bodies,—a most clumsy-looking but a very effective mode of attack. I remember seeing another, apparently public property, in the market of Tamerna, who would go round and levy willing contributions from the venders of dates and barley, and who slept at night (I suppose I must not say roosted) in the open square. But he presented a very beggarly appearance; for, in return for the alms he received, he had yielded to his caterers every feather in his body.

Once, and once only, had I the good fortune to take an Ostrich's nest; though fresh eggs were frequently brought in by the Arabs. There is something irresistible to the Nomad in the charm of an Ostrich-chase; and, often as our exhausted horses had suffered from the vain pursuit, it was almost impossible to hold in our servants, when the alarm was given, from wildly galloping over the plain. On this occasion, however, we had observed with our telescopes two birds standing for some time in one spot, and were induced to ride towards them. By great good fortune we detected their track as we crossed it; for, the stride of the Ostrich often measuring, when at full speed, from 22 to 28 feet, and there being simply the round impression of his two toes, it is very difficult to discover its course. We traced these steps back to the spot where we had seen the birds standing, and where the sand was well trodden down. Two Arabs at once dismounting began to dig with their hands, and presently brought up four fine fresh eggs from a depth of about a foot under the warm sand. I may remark that the egg of the North African Ostrich seems to differ decidedly from that of the Cape bird. I have seen hundreds of specimens, and always found them rather larger than the southern eggs which we generally see in England, and quite smooth, with an ivory-polished surface and free from any punctures. Until I found the eggs myself, I was under the impression that they might be polished by the Arabs; but this is a mistake. The eggs are applied to various uses by the natives, chiefly as ornaments for their tents, drinking-cups and workboxes, but above all for the embellishment of the mosques, where long rows are suspended from the arches or rafters, and of the burying-grounds, where each grave, especially at Waregla and Ngoussa, is decorated with an Ostrich-egg set in mortar at the head and at the foot, the Shieks being honoured with from twelve to twenty each—sometimes planted all round the grave, sometimes built into a pyramidal shape at the head.

The Ostrich appears to lay from the beginning of December to March—at least, fresh eggs are to be obtained throughout that period; but I was unable to ascertain either the time of incubation or the number of the brood, as no dependence can be placed on the Arab stories on these points. From all I could learn, the number of eggs is not less than twelve; and the young are generally hatched about the end of February. The hunters all agree, that, though the parent bird covers the eggs with sand during the day, she incubates them herself at night, and that her mate remains in attendance by her.

It will be interesting to ascertain, by a comparison of living specimens, whether there be any distinction between the bird of the North and South African deserts, as seems to be indicated by the eggs[*].

110. OTIS TETRAX. (Little Buzzard.) "*Rha'ahd, Rha'ahda,*" Arab.

Found only in the plains on the north of the Sahara, and seldom beyond the limits of barley cultivation. On its migration it occurs in the southern oases for a few days together.

111. HOUBARA UNDULATA. (Ruffled Bustard.) "*Houbara,*" Arab.

Occurs throughout the Sahara, but becomes very scarce southward, though most abundant in the neighbourhood of the Dayats and to the edge of the Chebkha M'zab. A description of the mode of chasing the Houbara is given in 'The Ibis,' vol. i. p. 284. Its nidification does not call for any remarks. The complement of eggs appears to be three, sometimes only two. Unlike the Little Bustard, it is a permanent resident.

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[*] When the young Ostriches from the Cape, presented by Sir George Grey to the Zoological Society of London, are as fully grown as their companions from Barbary, in the Gardens of the same Society, this may be done without difficulty. Prince Charles Bonaparte has already distinguished an Ostrich as *Struthio epoastichus* (C. R. xliii. p. 841); but I am not sure that this name is intended for either the Northern or Southern Bird.—ED.

112. ŒDICNEMUS CREPITANS. (Norfolk Plover.) "*Kheèroona*," Arab.

Common in the Northern Sahara throughout the year.

113. GRUS CINEREA. (Common Crane.) "*Rhernoug*," Arab.

On passage in spring and autumn, sometimes halting for a time in the salt marshes.

114. ANTHROPOÏDES VIRGO. (Numidian Crane.)

A small flock of this graceful and interesting bird might generally be seen quitting one margin of a salt pond as we approached the opposite edge. My acquaintance being so distant, I can only add my testimony to the truth of their attachment to the Terpsichorean art from the habits of four kept in the court-yard of General Yussuf at Blidah, which I have seen performing a stately minuet in concert for an hour together.

115. BALEARICA PAVONINA. (Balearic Crane.)

I once, and once only, observed a pair of these fine Cranes on the dry sands of the Guerah-el-Tharf in the month of April.

116. CICONIA ALBA. (White Stork.) "*Belerdj*," Arab.

Respected in the Sahara as in Holland, a welcome visitor and a cherished friend. It builds on the tops of the "semaurs" or mosque towers of the M'zab; but even there, no less than in chilly Denmark, "the Stork knoweth her appointed times," and retires in November. Its food there consists of Lizards of the desert. Protected as it is by universal public opinion, it still shows a considerable degree of anxious suspicion for its young, and, when introducing them to the feeding-grounds in the salt marshes, is the first to give the alarm of a stranger's approach to the Cranes and Herons around it.

117. **Ardea cinerea.** (Common Heron.) "*Bou Auk.*" Arab. Occasionally to be seen in the ditches and salt marshes of the oases in winter.

118. **Ardea purpurea.** (Purple Heron.) In the same localities, but far more numerous; never, however, so far as I know, gregarious in winter.

119. **Herodias alba.** (White Egret.) "*Aï zouch,*" Arab. Three or four of these magnificent Herons used to resort to the salt lake of Waregla. Again, I met with them at Dzouia, Temaçin, Tamerna, and Tuggurt, but always in small flocks and very shy. Never found, like their congeners, in the ditches or under palm-trees, but in the wide open marshes and chotts, where they were extremely wary. They are only winter visitants to the Sahara. I was informed that they breed near Benzert on the Tunisian coast, but did not see them there.

120. **Herodias garzetta.** (Little White Egret.) Universally distributed in small numbers wherever a suitable locality exists, and frequenting familiarly the gardens and ditches of the oases. It breeds in society on the lake Fetzara, and doubtless in more southern marshes also. Vide 'Ibis,' vol. i. p. 358.

121. **Bubulcus ibis.** (Buff-backed Heron.) Very common throughout the year about oases.

122. **Buphus comatus.** (Squacco Heron.) In small companies about marshes. Vast flocks resort to the lakes of Tuggurt, a portion only of which, as I am informed, remain to breed.

123. **Ardetta minuta.** (Little Bittern.) Generally distributed and resident.

124. **Botaurus stellaris.** (Common Bittern.) In all the larger marshes, but not in open salt lakes. I shot one as far south as Ngoussa, in a watered palm-grove.

125. **Nycticorax griseus.** (Night Heron.) In the palm-forests of Tuggurt. Probably throughout the whole of the Wed R'hir.

126. Phœnicopterus antiquorum. (Flamingo.) *"Shabroose,"* Arab.

Appears to exhibit a constant aversion to marshes or lakes partially surrounded by trees, and consequently does not occur in the Wed R'hir. A large flock were observed feeding in the open chott of Waregla. It certainly does not breed there.

127. Geronticus comatus. (Bald Ibis.)

This extraordinary bird I never saw during my second sojourn in Algeria; but on my first visit to the Sahara in the spring of 1856 I obtained two specimens in the rocky ridges beyond Bou Guizoun, on the road to El Aghouat. Unlike the rest of its family, it resorts only to the most arid and desolate mountain ranges, where it consorts with the raven and the falcon. Its food, as I ascertained, consists of lizards and serpents; but it is doubtless ignorant of the flavour of tailless Batrachians. It breeds in inaccessible holes of the precipices, which I was unable to reach, though I saw the birds going in and out. Capt. Dastugue of the French 'Génie,' showed me a coarse egg of a deep blue colour, almost the size of that of the Common Heron, which he believed to be the egg of this bird. It does not appear to be gregarious. The bright red legs and feet of a fresh-killed specimen are peculiarly coarse and rough in the scales, adapted evidently for rocks and sand, rather than mud and water. The bare portion of the head and neck is, as well as the bill, of a brilliant crimson.

128. Falcinellus igneus. (Glossy Ibis.) *"Maâzet et Mâ"* (Devil Crow), Arab.

Two or three of these birds were seen with the Little Egrets at Tuggurt. They are nowhere common.

129. Eudromias morinellus. (Common Dotterel.) *"El Mohr"* (rich), Arab.

Vast flocks of Dotterels in winter plumage occurred frequently during our wanderings wherever Lalpha (*Andropogon*) or other desert vegetation harboured beetles. They were very tame, and in good condition. It is of course only a winter visitant.

130. Ægialites cantianus. (Kentish Plover.)

One of the most universally distributed denizens of the Sahara, to be found running rapidly along the sand by all the chotts and sebkhas in parties of from two to eight. It breeds everywhere, but, unlike our Ring-Plover, appears to lay only three eggs, which are placed on the level sand, without the precaution of even selecting the impress of a camel's foot.

131. ÆGIALITES MINOR. (Little Ring-Plover.)

As universally distributed, but not nearly so abundant, as the last-mentioned. There seems to be this distinction in their habits, that the Little Plover resorts rather to the weds and dry water-courses than to the open salt-lakes. In winter plumage it is very difficult to discriminate between a large series of these two birds.

132. CURSORIUS GALLICUS. (Cream-coloured Courser.) "*Song el Ibel*" ("Camel-pricker"), Arab.

From the small number we observed during winter, I am inclined to believe that even in the southern desert the greater portion migrate. See 'Ibis,' vol. i. pp. 79, 354.

133. VANELLUS CRISTATUS. (Lapwing.) "*Bibeth,*" Arab.

A few penetrate as far as the Chamba country, where I shot them in December. Not even a straggler remains in Northern Algeria after March.

134. GLAREOLA PRATINCOLA. (Collared Pratincole.)

Extremely abundant whether near marshes or lakes. Found at Aïn el Ibel, Western Algeria, in October, and breeding in the same district in June, as well as the following year throughout the Eastern district. See 'Ibis,' vol. i. p. 354.

135. HIMANTOPUS MELANOPTERUS. (Black-winged Stilt.)

Resorts to the ditches of the oases in winter. Breeds at El Aghouat, but more abundantly in the Northern Sahara. See 'Ibis,' vol. i. p. 355.

136. RECURVIROSTRA AVOCETTA. (Avocet.)

A few observed at Tuggurt in January.

137. GALLINAGO MEDIA. (Common Snipe.)

In ditches and marshes everywhere in winter.

138. GALLINAGO GALLINULA. (Jack Snipe.)

One shot by my companion in the Wed R'hir.

139. Machetes pugnax. (Ruff.)

I shot a solitary Reeve at Tuggurt in December, the only one I ever saw south of the Atlas. It is a common winter visitant in the Tell.

140. Tringa alpina. (Dunlin.)

Common in winter on the shores of the salt-lakes.

141. Tringa temminckii. (Temminck's Stint.)

Extremely common in winter. I never saw *Tringa minuta*, which has been found by Capt. Loche.

142. Gambetta calidris. (Redshanks.)

Not unfrequent.

143. Totanus ochropus. (Green Sandpiper.)

Universally distributed throughout the winter, and by far the most common of the class. Not a ditch or a pond in a palm garden without its pair, but never more than two together. We found it at Zana to the end of June.

144. Totanus glareola. (Wood Sandpiper.)

Far less frequent than the last, but by no means rare. In similar localities, but also occasionally in open marshes.

145. Tringoides hypoleucus. (Common Sandpiper.)

Not unfrequent about Tuggurt, Ngoussa, and Waregla.

146. Numenius tenuirostris. (Slender-billed Curlew.)

I saw one shot by a French officer at Oumache, near Biskra.

147. Rallus aquaticus. (Water Rail.)

One procured in November in a pond at El Aghouat.

148. Gallinula bailloni. (Baillon's Crake.)

In the reeds at Tamerua, Wed R'hir.

149. Porphyrio hyacinthinus. (Great Purple Gallinule.)

At Tuggurt, but scarce. Far more abundant in the northern lakes. In corroboration of its carnivorous character, I may mention that I saw one in the yard of General Yussuf seize a young duckling in its huge foot and crush its head with its bill, after which it ate the brains and left the rest of the carcase untouched.

150. Fulica atra. (Common Coot.) "*Ghorra,*" Arab.
Common about Tuggurt. Its congener, *Fulica cristata*, appears to be confined to a few northern lakes on this side the Atlas.

151. Anser segetum. (Bean Goose.) "*Onza,*" Arab.
I saw one at Temaçin recently shot.

152. Casarca rutila. (Ruddy Shieldrake.)
Hundreds of these birds resort to the salt-lakes of Bou Guizoun, Waregla, Tuggurt, &c. At Bou Guizoun I captured some half-dozen nestlings of various ages in the downy state, some of them scarcely more than a day old; and yet the only place where they could possibly have bred, and where we had procured a nest three days previously, was a range of cliffs more than twelve miles distant. This was in May 1856.

153. Tadorna vulpanser. (Common Shieldrake.)
A few at Tuggurt, but not nearly so abundant as *Casarca rutila*. Elsewhere I did not observe it until our arrival at Djendeli.

154. Anas boschas. (Common Wild Duck.)

155. Chaulelasmus streperus. (Gadwall.)

156. Rhynchaspis clypeata. (Shoveller.)

157. Querquedula crecca. (Teal.)

158. Dafila acuta. (Pintail.)

159. Mareca penelope. (Wigeon.)
All of these were more or less frequent wherever there was water.

160. Fuligula cristata. (Tufted Duck.)
In immense numbers on all the lakes.

161. Fuligula ferina. (Pochard.)
Large flocks near Tuggurt.

162. Nyroca leucophthalma. (White-eyed Duck.)
Very common both in lakes and ditches.

163. Callichen rufina. (Red-crested Whistling Duck.)
Occasionally procured in the Wed R'hir and at El Aghouat.

164. Erismatura mersa. (White-headed Duck.)

In the lake of Bou Guizoun, June 1856; Tuggurt, December 1856.

165. Gelochelidon anglica. (Gull-billed Tern.)

Occurs in flocks both in the Western and Eastern Sahara. Several shot at Bou Guizoun, and near Aïn el Ibel, on the El Aghouat route, and vast flocks met with round the Zahrez, in the same country. We found it also breeding at Zana the following spring.

166. Sterna minuta. (Least Tern.)

Occurred at Bou Guizoun. Not plentiful.

167. Hydrochelidon nigra. (Black Tern.)

Resorts to various salt-lakes. I only met with it in the Western Sahara.

168. Hydrochelidon leucoptera. (White-winged Black Tern.)

More widely distributed than the last-named.

169. Hydrochelidon hybrida. (Whiskered Tern.)

Abundant on most of the salt-lakes, but never observed in company with the *H. leucoptera.* It is in the habit of following the labourers in the oases in the barley patches in pursuit of insects.

170. Podiceps cristatus. (Great Crested Grebe.)

Observed once at Tuggurt. Apparently only a solitary straggler.

171. Podiceps auritus. (Eared Grebe.)

In the lakes of the Wed R'hir.

172. Podiceps minor. (Little Grebe.)

Common in the Northern Sahara.

None of the Grebes were noted by me in the South, even in the most suitable localities.

I here conclude my catalogue of the birds of the Sahara; and though I fear the readers of 'The Ibis' will have found my long-drawn story as dry as the desert which has produced it, I cannot presume to think that it is by any means complete. I have confined myself to the birds which fell under my own observation in a period of two years, of which only a portion was spent in the true Desert. When again I glance at the list of Waders, and see how many species Capt. Loche has been able to include as winter visitants to the Tell, many of whom, we may fairly presume, straggle into the Desert, I am fully conscious of my deficiencies.

It will be noted that most of the rarest and most interesting forms occurred only in the extreme south, where, from the danger of wandering far from camp, and from the rapidity with which we were often compelled to travel, many species might have been overlooked. To naturalize perseveringly in a desert is no easy task, especially when at a distance from water; for the delay of a day may prove death to a whole caravan. The further we penetrated south and east, Nubian and Abyssinian types more frequently occurred, and the scarcer the European forms became. After the information collected by Rüppell, Heuglin and others on the Ornithology of Eastern Africa, we can scarcely anticipate the discovery of many new species in the still unexplored Touareg country. But the western limits of the Nubian fauna is a problem still unsolved; and for its solution we need a careful observation of the birds on the route from Tripoli to the Soudan *viâ* R'hedames. I believe it will be found that at Waregla we bid adieu to European species, except as winter visitants, and enter upon the Ethiopian zone. The Sahara is the debateable land between the two; and its southern portion is adapted for the existence of but few of our European forms.

VIII.—*Note on the Migratory Habits of the Song Thrush* (Turdus musicus). By Alfred Newton, M.A., F.L.S., F.Z.S.

Mr. Tomes, in his excellent paper on White's Thrush in the last Number of 'The Ibis' (1859, p. 379), speaks of the Song Thrush (*Turdus musicus*) as having "resident habits," and possessing "organs of flight not adapted for migration." Now, without pausing to inquire whether the words "resident" and "migratory" do not in most (if not in all) cases refer to special localities, and also whether we may not be confusing two very dissimilar ideas in applying these terms indiscriminately to the collective or particular individuals of a species, I wish to remark that I believe the Song Thrush, throughout by far the greater part of its geographical range, to be *essentially migratory*. It is true that this fact has not been recorded by many writers in this country; but to mention the naturalists who have noticed it on the Continent would be to enumerate almost every European ornithologist of authority, from Sweden to Sicily. Of British authors, however, Mr. Selby alludes (Brit. Orn. i. p. 163) to the "considerable accession in number" which our native Song Thrushes receive towards the end of autumn from the north,—a remark which is quoted also by Mr. Yarrell (B. B. i. p. 195). Messrs. Gurney and Fisher, in their "Account of Birds found in Norfolk," state (Zool. p. 1306) that "in very severe winters, many of the Song Thrushes appear to leave this district and to go further south;" while two foreign naturalists, MM. Deby and Duval-Jouve, in local lists which have been printed in this country, speak in still more unqualified terms of the migration of this species. The former, in his "Notes on the Birds of Belgium," says (Zool. p. 861) that it is "very common in March and April in spring, and on its return in September and October," and further gives (Zool. p. 1133) "March 24" as the date of this bird's arrival at Laeken in the spring of 1845. The latter, in his "List of the Migratory Birds of Provence," not only includes it among the "Regular Birds of Passage," but says (Zool. p. 1118), "This is the bird of passage, *par excellence*, of our country," and asserts that in its migration it crosses the Mediterranean.

I may add that my own experience tends to show that all these authors are right in their statements. Since the autumn of 1849, my brother Edward and myself have paid much attention to the presence or absence of the so-called "resident" species of *Turdus*. The result of our observations is such as to leave on our minds not the slightest doubt of the regular migration of the Song Thrush, as far as concerns the particular locality whence I write. Year after year we have noticed that, as summer draws to a close, the birds of this species (at that season very abundant) associate more or less in small companies. As autumn advances, their numbers often undergo a very visible increase, until about the middle of October, when a decided diminution begins to take place. Sometimes large, but more generally small flocks are seen passing at a considerable height overhead, and the frequenters of the brakes and turnip-fields grow scarcer. By the end of November, hardly an example ordinarily appears. It is true that sometimes, even in severe weather, an individual or so may be found here and there, leading a solitary life in some sheltered hedge-bottom or thick plantation which may afford conditions of existence more favourable than are elsewhere to be met with; but this is quite an exceptional occurrence. Towards the end of January or beginning of February, their return commences. They reappear at first slowly and singly; but as spring advances, in considerable abundance and without interruption, until, in the height of the breeding-season, they by far outnumber their more stay-at-home cousins the Blackbirds.

I do not suppose for a moment that these facts are similar all over England; indeed the testimony of many of my friends assures me to the contrary. Still I am induced to think that by constant and accurate observers some migratory tendency is to be detected in other districts; and as we are often told that the subject of British ornithology is exhausted (an assertion I much doubt), I venture to call the attention of naturalists to this point as one on which it certainly cannot be said at present that we have "too much light."

Elveden, December 1859.

IX.—*Recent Ornithological Publications.*

1. English Publications.

The second part of the 'Proceedings' of the Zoological Society for this year contains all the papers read up to the end of the last meeting before the summer vacation, amongst which are many on ornithology, by Dr. Adams, Mr. Bartlett, Dr. Bennett, and Messrs. Gould, G. R. Gray, and Sclater. The Illustrations of Birds are four in number, all drawn by Wolf.

The December number of the 'Annals and Magazine of Natural History' (vol. iv. p. 467) records the occurrence on the coast of Devonshire of a species of Gull new to Great Britain—*Larus ichthyaëtus* of Pallas. This "giant of the Black-headed Gulls was shot by a boatman, in the river off Exmouth, about the end of May or beginning of June last." The specimen is now in the possession of F. W. L. Ross, Esq., who contributes the notice to the 'Annals.' This bird is common in the Caspian, according to Pallas. Did it come here in company with the flock of Pallas's Sand-grouse, which arrived from nearly the same country about the same time?

Sir James Emerson Tennent's excellent volumes on Ceylon* give a well-written and interesting sketch of the Ornithology, as of the other branches of Natural History of that island. The author does not appear to have been acquainted with Dr. Hartlaub's paper in Cabanis' 'Journal für Ornithologie' (1854, p. 151), where a good *résumé* of our knowledge of Ceylonese ornithology has already been given; but he draws his results directly from the labours of Dr. Templeton, Mr. E. L. Layard, and Dr. Kelaart, on whose researches Dr. Hartlaub also founded his notice, and to whose exertions we owe the present comparatively perfect knowledge which we possess of the *Avifauna* of Ceylon.

"Of the *birds* of the island," says Sir James Emerson Tennent, "upwards of 320 species have been indicated, for which we are indebted to the persevering labours of Dr. Templeton, Dr. Kelaart, and Mr. Layard; but many yet remain to be identified. In fact, to the eye of the stranger their prodigious numbers, and especially the myriads of water-fowl which, notwithstanding the presence of the Crocodiles, people the lakes and marshes in the eastern provinces, form one of the marvels of Ceylon.

"In the glory of their plumage the birds of the interior are surpassed by those of South America; and the melody of their song will bear no comparison with that of the warblers of Europe: but the want of brilliancy is compensated by their singular grace of form, and the absence of prolonged and modulated harmony by the rich and melodious tones of their clear and musical calls. In the elevations of the Kandyan country there are a few, such as the Robin of Neura-ellia (*Pratincola atrata*, Kelaart) and the Long-tailed Thrush (*Copsychus macrurus*), whose song rivals that of their European namesakes; but, far beyond the attraction of their notes, the traveller rejoices in the flute-like voices of the Oriole, the Dayal-bird (*Copsychus saularis*), and some others equally charming, when, at the first dawn of day, they wake the forests with their clear *réveille.*

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* Ceylon: an account of the Island, Physical, Historical, and Topographical, with Notices of its Natural History, Antiquities, and Productions. By Sir James Emerson Tennent, K.C.S., LL.D. London, 1859, 2 vols. 8vo.

"It is only on emerging from the dense forests and coming into the vicinity of the lakes and pastures of the low country, that birds become visible in great quantities. In the close jungle one occasionally hears the call of the Coppersmith (*Megalaima indica*), or the strokes of the Great Orange-coloured Woodpecker (*Brachypternus aurantius*) as it beats the decaying trees in search of insects, while clinging to the bark with its finely-pointed claws and leaning for support upon the short stiff feathers of its tail. And on the lofty branches of the higher trees the Hornbill (*Buceros pica*), with its enormous double casque, sits, to watch the motions of the tiny reptiles and smaller birds on which it preys, tossing them into the air when seized, and catching them in its gigantic mandibles as they fall."

As we emerge from the deep shade and approach "the park-like openings on the verge of the low country, quantities of Pea-fowl (*Pavo cristatus*) are to be found, either feeding amongst the seeds and nuts in the long grass, or sunning themselves on the branches of the surrounding trees. Nothing to be met with in England can give an idea either of the size or magnificence of this matchless bird when seen in his native solitudes. Here he generally selects some projecting branch from which his plumage may hang free of foliage; and if there be a dead and leafless bough, he is certain to choose it for his resting-place, whence he droops his wings and suspends his gorgeous train, or spreads it in the morning sun to drive off the damps and dews of the night.

"In some of the unfrequented portions of the eastern province, to which Europeans rarely resort, and where the Pea-fowl are unmolested by the natives, their number is so extraordinary that, regarded as game, it ceases to be 'sport' to destroy them, and their cries at early morning are so tumultuous and incessant as to banish sleep and amount to an actual inconvenience. Their flesh is excellent when served up hot; but when cold, it contracts a reddish and disagreeable tinge, and is said to be indigestible.

"But of all, the most astonishing in point of multitude, as well as the most interesting from their endless variety, are the myriads of aquatic birds and Waders which frequent the lakes and watercourses, especially those along the coast near Batticaloa, between the mainland and the sand-formations of the shore, and those which resort to the innumerable salt-marshes and lagoons to the south of Trincomalie. These, and the profusion of perching-birds—flycatchers, finches, and thrushes—which appear in the open country, afford sufficient quarry for the raptorial and predatory species—eagles, hawks, and falcons—whose daring sweeps and effortless undulations are striking objects in a cloudless sky."

Messrs. Freeman and Salvin's 'Falconry'* does not perhaps come strictly within the definition of an Ornithological work; but we are sure that many of our readers will be glad to have their attention called to it. We were not aware that cormorant fishing had been successfully revived in these latter days as well as hawking!

We do not presume to enter here upon a criticism of Mr. Darwin's learned Essay 'On the Origin of Species†;' but we mention it as a book which must be read with pleasure by every naturalist, whether he may participate in the author's views or not, as a most valuable and interesting contribution to our knowledge of an important but difficult and generally avoided subject. One observation, however, we beg leave to offer, namely that, should Mr. Darwin's views be well founded, it by no means follows that we should consider species as otherwise than "finitely" invariable. Specific differences, if produced by the ordinary laws of generation, can only be arrived at at the end of series of generations, which may be supposed for all intents and purposes to be infinite. The adoption of Mr. Darwin's views should therefore by no means discourage naturalists from the great work of the differentiation of species. And, whatever amount of success we are inclined to allow to the work, we must all, I think, allow that Mr. Darwin's theory of "natural selection" is the only really philosophical attempt which has been made to explain one of the most anomalous phenomena in nature —the violation of its ordinary laws caused by the *continuous* introduction into the world of new forms of animated life.

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* Falconry, its Claims, History, and Practice. By G. E. Freeman and F. H. Salvin. To which are added, Remarks on Training the Otter and the Cormorant. London, 1859, 1 vol. 8vo.

† On the Origin of Species by means of Natural Selection. By Charles Darwin, M.A., &c. London, 1859, 1 vol.

Dr. Adams and Dr. A. L. Adams have reprinted, "with a few verbal alterations," a paper read at the late meeting of the British Association in Aberdeen, "On Ornithology as a branch of liberal Education*," containing notes on all the wild birds which have been discovered in Banchory Ternan by the former, with remarks upon such of them as have been found in India by the latter gentleman.

Mr. Henry Stevenson of Norwich has kindly lent us the 'Supplement to the China Mail,' No. 670, published at Hongkong, on the 17th December, 1857. It contains an article read by Mr. Swinhoe at a meeting of the Literary and Scientific Society of Amoy, entitled "A few remarks on the Fauna of Amoy," which was previously unknown to us. There are some notices here given of the habits of the birds; but Mr. Swinhoe's account of the Ornithology of Amoy, which we have the pleasure of publishing in our present Number, is in every way more perfect.

To Mr. Stevenson we are also indebted for the perusal of Mr. Swinhoe's "Narrative of a visit to the island of Formosa," published in the 'Journal of the North China Branch of the Royal Asiatic Society.' Several birds are mentioned as having been observed—*Alauda minuta, Sterna caspia* and *S. minuta, Oriolus sinensis, Dicrurus malabaricus, Hirundo daurica,* and species of

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* Aberdeen, 1859, 8vo. pp. 36.

Pomatorhinus, Hydrochelidon, Centropus, and *Cinclus.* We hope that Mr. Swinhoe may be induced to supply this Journal with a more perfect account of the birds of this little-known island, and that he will be able to tell us whether Dr. Pucheran* is correct in stating that the curious Parrot, *Dasyptilus fulgidus,* is found there. The general character of the ornithology would lead us to doubt the presence of a Parrot in this locality.

Mr. Blyth's "Report" for May, 1859, of the additions made to the Museum of the Asiatic Society of Calcutta, published in the 'Journal' of that Society (for an early copy of which we are much indebted to the author), contains several notices relating to Birds. The species from the Andamans have already been mentioned in Mr. Blyth's letter (vol. i. p. 465; see also *infra,* p. 99). The Burmese Kestrel is *Tinnunculus saturatus,*—not '*atratus,*' as we had given it in 'The Ibis,' vol. i. p. 211. Mr. Blyth now distinguishes his *Macrorhamphus semipalmatus* of India not only specifically but generically from the North American *M. griseus,* under the title *Pseudoscolopax*; and states, as the result of an examination of 'a fine adult example of a British Peregrine,' that it "quite bears out the opinion of Prince Bonaparte, Mr. Gould, and others, that the *Bauri* Falcon of India should be recognized as distinct, by the name *Falco calidus,* Latham. A glance suffices to distinguish them."

The Third Number of Mr. Eyton's 'Osteologia Avium' has been delivered to the subscribers. The letter-press finishes the second order, denominated by Mr. Eyton *Volitores* (*Volatores*?), which embraces the *Trochilidæ* and *Cypselidæ,* and commences the third order, *Omnivores* (*Omnivoræ*?).

The last three numbers of 'The Zoologist' for 1859 contain (pp. 6709 and 6761) a continuation of Mr. Osburn's "Notes on the Mountain-Birds of Jamaica," in which he again mentions the Black Banana-bird (*Nesopsar nigerrimus*), and enters at length upon the habits of the Swifts and Swallows of those regions. Mr. Swinhoe's "Description of the small Chinese Lark" (p. 6723), which he proposes to name *Alauda cœlivox,* will also be read with much interest.

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* Rev. et Mag. de Zool. 1853, p. 156.

A new edition of "The 'Zoologist' List of Birds observed in Great Britain and Ireland"* is "compiled from the third edition of Yarrell's British Birds," and, according to the author, "comprises all the additions and corrections necessary up to the 1st of November, 1859."† As it is "particularly requested that ornithologists will adopt the names here employed," it is perhaps only reasonable that we, who do not adopt them, should shortly state our reasons for declining to comply with Mr. Newman's demands, and for exciting our brother naturalists to join us in our rebellion.

In the first place, the scientific nomenclature of this list is by no means in accordance with Yarrell's (as witness FALCO *palumbarius* and FALCO *milvus*); it is also entirely arbitrary as regards the adoption or non-adoption of generic divisions; and, with respect to the names of species, the "golden rule of priority" is seldom, if ever, attended to. Several species are *included* which are omitted by Yarrell,—*e. g.* the "Greenland Falcon," "Bimaculated Duck," "Paget's Pochard," and "Swift Tern." Two species at least included by Yarrell are *omitted*—Schinz's Sandpiper‡ and "The American Scaup;" the former resting satisfactorily on two specimens mentioned by Mr. Yarrell and on a third recorded in 'The Zoologist,' p. 6537 (now in Mr. J. H. Gurney's collection), and the latter on an example in Mr. Tindall's collection, referred to by Mr. Yarrell, and originally recorded in 'The Zoologist' (p. 4631). The North American Stint (*Tringa pusilla,* L.) is *included,* we suppose as being mentioned in Mr. Yarrell's preface; but the Mottled Owl (*Strix asio,* L.), though mentioned in the same place, is *omitted.*

The "Little Owl" is called "*Strix passerina,* Lth., not Ln.," with a note that "this bird is the *Strix nudipes* of NILLSON" (*sic*). [It ought to be Nilsson.] Linnæus's unobjectionable name, *Strix noctua* (which also has the priority), is thus discarded for no assignable reason, and confusion is caused by the citation of two other names which are the peculiar property of two other perfectly distinct species.

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* London, 1859, one sheet.

† See advertisement in 'The Zoologist' for December 1859.

‡ *Tringa schinzii,* Bp. = *T. bonapartii,* Schlegel.

Why is "*Sylvia suecica*" marked with a "*," to signify that it is an "accidental or occasional visitor" from Europe, while "*S. turdoides*" and "*S. galactotes*" (it ought to be *galactodes*) (*γαλακτώδης*; Th. *γάλα, -ακτος, lac*, and *εἶδος, facies*) are left unmarked,—though the former species has occurred at least three times as often as either of the latter?

Picus major is called "Spotted Woodpecker" instead of "*Great* Spotted Woodpecker"—the omission of the first distinguishing epithet not having the sanction of any British author. The name "Yellow-billed Cuckoo" in the same way is liable to cause mistakes, unless the word "American" be inserted, and its omission also is not warranted by the example of any former writer.

We are left without any information as to the authorities for the names "*Vanellus melanogaster*," "*Himantopus melanopterus*," and "*Phalaropus platyrhynchus*."

The "Esquimaux Curlew," one would suppose, should, from its name, be marked as a straggler from America rather than from Europe,—a supposition strengthened when it is found that only two instances of its occurrence in the Old World have hitherto been recorded. The "Yellow-shanked [!] Sandpiper" merits exactly the same sort of remark. On the other hand, "†Steller's Western Duck" should rather be considered Asiatic. It is known to breed in Siberia, and not in America. Again, the "*Great Auk" was certainly as much a British bird as ever it was a European one. Lastly, the name "White-headed Petrel" is a misnomer as applied to Kuhl's *Procellaria hæsitata*, and properly belongs to an entirely different species. The correct English name for this bird is "The Capped Petrel," given to it by Mr. Alfred Newton, who acted as *accoucheur* on its first introduction into the British fauna (see 'Zoologist,' p. 3693), and afterwards adopted by Mr. Yarrell.

These and such-like criticisms may seem somewhat out of place in a Magazine which (as we are informed by the gentleman who is employed to answer the Naturalists' queries in the 'Field'

Newspaper) is "*chiefly devoted to technical descriptions of foreign birds new to science*;" but should they meet the eye of him who thus veraciously responds to the question whether there be any Magazine devoted to birds *besides* 'The Zoologist,' we trust that they may induce him to reconsider his reply, and to admit that we sometimes give up our 'technical descriptions' to notice even such unsatisfactory compilations as "The 'Zoologist' List of British Birds."

In the 'Sporting Magazine' for July and September of last year will be found some well-written notices of the haunts and habits of some of the principal Game-birds of the Himalayas, by 'Mountaineer.' They relate to the "Horned Pheasant" (*Tragopan melanocephala*), the "Monall" (*Lophophorus impeyanus*), the "Cocklass" (*Pucrasia macrolopha*), "Cheer" (*Catreus wallichii*), "Kaleege" (*Gallophasis albo-cristatus*), and "Snow Pheasant" (*Tetraogallus himalayensis*).

2. French Publications

The number of the 'Revue et Magasin de Zoologie' for October contains M. Pucheran's "Observations sur deux espèces de Passereaux originaires des Açores," to which we have already alluded * on their original publication in 'L'Institut.' They are accompanied by a figure of the new Finch, *Fringilla moreleti*. In the same number is the commencement of an Oological article by M. Moquin-Tandon, entitled "Considérations sur les œufs des Oiseaux."

The 'Annales des Sciences Naturelles' for 1859 contain the commencement of an important paper by M. Emile Blanchard, on the Osteology of Birds †, which merits not merely perusal, but attentive study. The introduction gives a general review of the labours of previous writers on this subject. M. Blanchard then goes on to speak of his own labours and of his 'Organisation du règne animal,' in which he has divided the class *Aves* into two orders—*Tropidosternii* and *Homalosternii*, corresponding with the *Aves carinatæ* and *Aves ratitæ* of Merrem, and gives his reasons for commencing his subject by treating of the *sternum*—without doubt the most characteristic portion of the bird-skeleton. No one can hesitate to agree with M. Blanchard as to the importance of determining how far the external characters of the animals of this class correspond with their osteological structure, and as to the value of the coincidences thus established in guiding us to a truly natural arrangement. It is with much pleasure we find M. Blanchard's attention in France, as well as Mr. Eyton's in our own country, now turned to this much-neglected subject.

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* 'The Ibis,' vol. i. p. 322.

† "Recherches sur les caractères ostéologiques des Oiseaux, appliquées à la classification naturelle de ces animaux."

The chapters devoted to the examination of the different modifications of the *sternum* of birds follow in order. We give a list of the names of the Linnean genera which head the several sections, by which a general idea of the affinities pointed out by M. Blanchard, as deducible from the examination of the sternum, may be formed. I. FALCO (*Helotarsus* is hardly different from true *Aquila*; *Spilornis* is near *Buteo*, from which also *Milvus* has barely sufficient characters to distinguish it): II. GYPOGERANUS: III. GYPAETUS: IV. VULTUR (*Gypohierax* resembles *Neophron*): V. STRIX (*Bubo* and *Scops* resemble *Otus* and *Brachyotus*): VI. PSITTACUS: VII. FRINGILLA, LOXIA, ALAUDA, PARUS, STURNUS, CORVUS, PARADISEA, CERTHIA, MOTACILLA, TURDUS, LANIUS, MUSCICAPA, PIPRA, TANAGRA, and HIRUNDO (all these have a very similar conformation of the sternum; *Paradisea* most resembles *Corvus* and *Garrulus*, as also *Meliphaga*; *Menura* is peculiar): VIII. CYPSELUS: IX. CAPRIMULGUS: X. TROCHILUS: XI. UPUPA and IRRISOR: XII. MEROPS and MOMOTUS: XIII. ALCEDO: XIV. TODUS: XV. GALBULA: XVI. CAPITO and BUCCO: XVII. PICUS and YUNX: XVIII. RAMPHASTOS: XIX. TURACUS: XX. TROGON: XXI. CORACIAS: XXII. CROTOPHAGA and CUCULUS: XXIII. BUCEROS. We may state, in conclusion, that we have the satisfaction of agreeing with M. Blanchard in nearly every affinity here pointed out.

3. GERMAN AND RUSSIAN PUBLICATIONS.

The third number of Cabanis' 'Journal für Ornithologie' contains an article by Dr. H. A. Bernstein, of Gadock in the island of Java, upon the nests and eggs of certain Javan birds. The account of the nidification of the Tree-Swifts (*Dendrochelidon klecho*) is novel and strange. The nest resembles in form and materials that of the little *Collocalia* or Edible-bird's-nest Swift, but is still *smaller* and *flatter*! It is a semicircular structure, and is affixed to a small naked horizontal branch high up in a tree, the branch forming the flat side of the nest. The walls, scarcely thicker than parchment, are made of feathers, tree-mosses, and bits of bark, cemented together by the viscous saliva of the bird. The nest, which contains a single perfectly oval egg, is so small, that the bird (as repeatedly observed by Dr. Bernstein) sits upon the branch and only covers it with her belly.

Henicurus leschenaulti builds on the ground, near water, with moss and dead leaves, and lays two eggs, greenish or yellowish-white, spotted with rufous.

We also strongly recommend the perusal of Herr Eug. von Homeyer's communication, "Ueber einige zweifelhafte Arten der europäischen Ornis."

Dr. Bolle will find, in the last Number of our Journal, some remarks by Mr. Salvin (p. 361) confirmatory of his theory of the *oophagy* of the *Rallidæ*. We beg leave also to refer Herr Schüter to our last year's volume for some important contributions to the discussion as to the mode of reproduction of *Oxylophus glandarius*.

The first number of the 'Bulletin de la Société Impériale des Naturalistes de Moscou' for 1859 contains an article * by Baron R. König-Warthausen, on the nesting of the Warblers of the division *Hypolais*, which will be of interest to European ornithologists. The species treated of as belonging to this group are the following:—(1.) H. OLIVETORUM, nests in Greece (Lindermayer and Von der Mühle): (2.) H. SALICARIA (*Motacilla hippolais*, Linn.; *H. icterina*, Degland; *H. luscinoides*, Landbek), nests in Würtemburg and Southern Germany, as observed by the author: (3.) H. CINERASCENS, Selys (*H. pallida*, Gerbe; *H. ari-*

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* "Zur Fortpflanzungsgeschichte der Spottsänger." Bull. Acad. Nat. xxxii. p. 238.

gonis, Brehm), nests in Spain (A. E. Brehm †): (4.) H. ELAICA (*Sylvia elaica*, Lind.; *S. ambigua*, Schlegel; *S. preglii*, Frauenf.), nests in Greece (Lindermayer): (5.) H. PALLIDA (*S. pallida*, Ehrenb.), nests in Nubia (Heuglin): 6. H. POLYGLOTTA (*S. polyglotta*, Vieill.), nidification unknown.

The notes on *H. pallida* (of which species little was before known) are somewhat as follows:—

" The I. R. Austrian Consul at Chartoum in the Sudan (Hofrath Dr. Th. von Heuglin) found this bird, which is also an inhabitant of Syria, all the year through in N.E. Africa. The skins collected by him in Egypt, as well as his observations on its habits, agree fully with Ehrenberg's. A variety with a stronger beak was found further southwards, in Nubia."

" He, as well as Blasius, believes in the possibility of the identity of this species with the Grecian *H. elaica*; but I do not hesitate to consider them as different for the present, because the question is not yet settled, and, moreover, two Egyptian nests, each with four eggs (for which, as well as for the observations here given, I have to thank Dr. Heuglin's kindness), are somewhat different from those of the latter species, whether specifically or climatically need not at present be settled."

" This Warbler, which, not quite properly (in the same way as *H. olivetorum* by Keyserling and Blasius), and chiefly because of its habits, was formerly united to the Reed-Warblers, delights mostly in water-ditches and reedy thickets. It nests in the hedges of gardens or in the thick Mimosa-bush (*Mimosa nilotica*), if *Arundo donax*, its favourite resort, is not far off.

" The nests are placed from two to fifteen feet high. Both mine are from Cairo itself—from the Especchia Place."

After giving an accurate description of the two nests, which were composed of strips of bass and dried stalks mixed with woollen threads and horsehair, and lined with fine tendrils of plants, with some Mimosa-leaves fixed on the outside, the author says of the eggs, of which there were four in each nest, " Their ground-colour is dark violet-grey, sometimes greenish-white; some are sparingly but uniformly spotted with minute freckles of blue-grey and black; others with larger round or irregular blotches, partly obliterated; others again, with a rather light ground and almost entire absence of the bright under-markings, are provided with larger dark red-brown points and obsolete blotches of bright red-brown. In the structure of the shell they come very near those of the preceding (*H. elaica*); yet the granulation of most of them is decidedly more elevated and finer. Keeping this point in view along with their less weight, smaller size, and more greyish ground-colouring, it would not be difficult in most cases to separate the eggs of this African form from those of its Grecian ally."

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† Confer Dr. A. E. Brehm's " Cursory observations on the Birds of Spain," in the 'Allgem. deutsche naturhist. Zeitung,' Bd. iii. (1857) p. 467.

The same part of the 'Bulletin' contains likewise (p. 24) an "Esquisse de l'Histoire naturelle de Kamienietz, Podolski, par Gustave Belke," in the course of which some account of the birds of this district of Podolia is given. There seems not much noticeable, except perhaps that *Otis tarda*, "très commune et en grande quantité, reste chez nous en hiver."

4. AMERICAN PUBLICATIONS.

The 'Proceedings of the Academy of Natural Sciences of Philadelphia,' which we have received up to p. 270 of last year's volume, contain, besides Mr. J. Xantus's Catalogue of Birds collected near Fort Teyon, California (p. 189), already noticed, a paper by Dr. T. Charlton Henry, on the Birds of New Mexico (p. 104), and a continuation of Mr. Cassin's valuable "Catalogue of Birds collected on the rivers Camma and Ogobai, Western Africa, by Mr. P. B. Du Chaillu in 1858, with notes and descriptions of new species" (pp. 133 and 172). The total number of species enumerated in this list is 238. The new birds now characterized are *Hyphantornis cinctus* and *Columba unicincta*. There are many others of great interest.

To Professor Baird's kindness we are indebted for early copies of a very interesting communication made to the Boston Society of Natural History, by Dr. Henry Bryant, entitled, "A List of Birds seen at the Bahamas from Jan. 20 to May 14, 1859, with descriptions of new or little-known species."* Dr. Bryant gives many notes on the habits and nidification of the birds of these islands—which have, as far as we know, never been before investigated by a naturalist. We are not surprised at his meeting with species apparently undescribed. The Humming-bird, *Trochilus bahamensis*, does not, however, fall into that category, as it is certainly *Trochilus evelynæ* (Proc. Zool. Soc. 1847, p. 44), belonging to the genus or section *Thaumastura*. Had the tail of the male of this species really only *eight* feathers, as supposed by Dr. Bryant, we should consider it even more *wonderful* than is indicated by the generic name *Thaumastura*; for we do not at present recollect any exception to the normal number of ten rectrices in the *Trochilidæ*. But a careful examination will, we have little doubt, prove that the two medial rectrices, though abnormally diminutive, are not altogether wanting.

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* See Proc. Boston Soc. N. H. vii. p. 102.

The other species described as new are *Empidonax bahamensis*, *Hirundo cyaneoviridis* (allied to Gosse's *H. euchrysea* of Jamaica), *Laniovireo crassirostris*, and *Mimus bahamensis* (probably the same as Cabanis's *M. gundlachii*). The accounts of the breeding of *Sula fiber* and *Phaëthon flavirostris* are of much interest.

X.—*Notices, Letters, Extracts from Correspondence, &c.*

It is with much regret that we commence our issue of the Second Volume of 'The Ibis' with the announcement of the death of one of the original promoters of our Journal, and a most valued contributor to its pages. Our friend and fellow-labourer John Wolley, having been in declining health for several months, died on the 20th of November last, at the early age of 36 years, leaving a vacancy in the number of the British Ornithologists' Union, which it will be very difficult to fill up. Of Mr. Wolley's career as a naturalist, and of his many brilliant discoveries and laborious explorations in various parts of the world in pursuit of his favourite science, we hope, with the kind assistance of a gentleman who is well acquainted with many of the events of his short though active life, to give some account in our next Number.

Mr. Blyth writes to us (from Calcutta, October 8th)—

"Among recent gatherings I have received *Palæornis erythrogenys*, nobis (*P. nicobaricus*, Gould), from Port Blair (Andamans). My name, however, will stand, as *erythrogenys* of Lesson = *longicauda* and *erythrogenys* of Fraser, is subsequent, and, moreover, in my opinion, refers to the genuine *P. barbatus*. Some time ago a fellow sold me a wholly black *Sturnopastor*, which he falsely stated was from Port Blair. The bird has now moulted into the ordinary plumage of *Sturnopastor contra*. Varieties of this bird are not very rare; and upon one of them Major Tytler founded his *St. moorii*. I am rather pleased to hear that I have a living specimen of my new *Kittacincla albiventris* now doing well at Port Blair. Our taxidermist employed there wishes to bring it with him himself when he returns, fearing to trust it to anybody else. I have offered him a good price for as many as he can procure for me alive, and am curious to hear the voice of this species, the Shámá (*K. macroura*) being, as you know, the prince of songsters in this part of the world. However, I have a Bhrim-ráj (*Edolius paradiseus*) which imitates the *Shámá's* song to such perfection that you cannot distinguish them apart. I formerly had another of the same species that did the same; but there is nothing that a good Bhrim-ráj will not imitate. I had one that imitated the crow of a cock to perfection, and would set all the cocks crowing within hearing, taking his turn with the rest most laughably. Every sound a fowl, a cat, a goat, or sheep can utter, the cry of a dog being whipped, the cawing of a crow, the whistling of scraps of tunes, and the song of the best singing birds, all these were repeated with marvellous accuracy by my Bhrim-ráj. In addition to all this, it is one of the most intelligent of birds (crow-like in this respect), and capable of strong attachment."

Besides a collection of birds, and valuable notes in this Number, several letters have been received from Mr. Salvin since our last issue, from which we give the following extracts:—

"Dueñas, August 30th.—I have now before me four very pretty skins of a Phalarope, which I shot upon the lake here a few days ago. The Snipe has not yet arrived, nor have the

Ducks. Of Humming-birds I find 12 species here, but none, I fear, new. I cannot, however, complain of the ornithological productions of Dueñas, for I seldom go out with my gun without bringing back some addition to my collection. You would be astonished at the great variety of country concentrated within a narrow compass. The consequence of this is a very local distribution of species, and at the same time a great variety. Birds seem to assemble in the valleys and plains; and little is to be found either in the more dense forest or on the steep hill-sides. The Volcan de Fuego is one of my favourite resorts. Scarcely a week passes that I do not enjoy a ramble in its forests. The village of Dueñas is situated on the north side of a plain, which skirts the volcano on its eastern side. From it the volcano rises to a height of 10,000 feet, and to between 14,000 and 15,000 feet above the sea-level, the summit of it being divided into three peaks, from the most southern of which issues a constant column of smoke, which, though small, is always visible. Opposite to it is the Volcan de Agua, a very respectable hill with a single peak, which attains to nearly the same altitude as the Volcan de Fuego.

"I am adding greatly to my knowledge of the distribution of the birds of this country; and my theories as regards the inhabitants of the hot and cold regions frequently receive severe blows; in course of time I hope they will be replaced by others based on a surer footing. I find a Humming-bird common at Yzabal and Dueñas [probably *Amazilia arsinoë* is referred to (Ed.)]; another is common at Escuintla, on the Pacific coast and near the city of Guatemala. At the same time it appears that *Pyranga erythromelæna, Chiroxiphia linearis,* and *Amazilia corallirostris* are all Pacific-coast species, and that none of them have as yet been met with in the Atlantic coast-region. *Cotinga amabilis* is, I strongly suspect, a bird of the high region. *Momotus lessoni* certainly is so, as also *Icterus giraudi.* So, you see, there is plenty to be done in the way of details, all of which require careful investigation."

"Dueñas, October 25th.—Tomorrow I start for San Geronimo, Salamá, and Coban. I have long had this expedition in my mind; for I am particularly anxious to see and find out where all the Vera Paz collections have been made, and I now go under very favourable circumstances. Three days hence will take me to the hacienda of San Geronimo, belonging to an English company, and where an English gentleman, whose acquaintance I made a short time ago, is staying. He is now going to Coban, and has asked me to join him.

"Among birds I have lately got several that have pleased me much. The Volcan de Fuego is a very fruitful locality, and I never go there without finding something fresh. I have shot this last month twenty-four species of *Mniotiltidæ*, not including some which I obtained last year. My Phalaropes are not *Phalaropus wilsoni*, as I thought at first; but Constancia has a skin of that species. There are therefore two Phalaropes which occur here."

Mr. G. D. Rowley writes from Brighton, as follows:—

"For some time past I have been aware of the existence of two kinds of Ringed Plover at Shoreham Harbour in this vicinity—a larger and a smaller. This circumstance is so conspicuous as to have attracted the attention of fowlers and others shooting; for on the wing the difference is very observable. I have now a fine stuffed specimen of each kind before me, both killed in the last week but one in August, this year, at Shoreham. The larger is *Charadrius hiaticula*; the smaller is no doubt *Charadrius minor*, the Little Ringed Plover. Independently of the marked difference in size, the black beak, much more slender legs and thighs, and general appearance, there is the black spot on the inner web of the outer tail-feathers of my small specimen.

"I should be curious to know if this British and real Little Ringed Plover corresponds with the foreign skins usually sold as those of that bird; I fancy not. Our *Charadrius minor* (of Shoreham) arrives in May, when the young of the other species are running about; and, as I strongly suspect, sometimes breeds here. The bird is not by any means so uncommon as represented by Yarrell. Mr. Swaysland, of the Queen's Road, always has some on hand. It again appears in autumn, after the spring migration.

"The migration of birds is a wonderful thing—wonderful even to the closet naturalist, but still more so to the field observer, little understood by any. Living on the south coast in spring and autumn, I have good opportunities of marking the arrival and departure of some birds. I have seen the Swallows (*Hirundo*), over the sea, actually arrive and pass straight inland without a pause or the least show of weariness. Not so the Chiff-chaffs and Willow-Wrens, which stay about the shingle at first, till they recover their strength—at least, I have seen them at five o'clock of a spring morning within a few yards of the waves. In autumn, on certain days (varying according to the wind), the gardens about Brighton are full of Ring-Ouzels, Chiff-chaffs, Willow-Wrens, Redstarts; on the Downs are Wheatears; in the air Goldfinches, Swallows, Green Linnets, &c. I have stood and watched these birds early on a fine morning (for birds of the above kinds do not fly in cloudy, dull days), going in continuous streams down to the sea, following one another as surely in the same direction as if going by a mariner's compass. The Roman augurs were not quite so absurd perhaps as one would at first imagine; a great many indications may be gathered from the flight of birds. Their motions appear to the common observer to be guided by chance; but the ornithologist knows that each bird he sees is employed on some particular business, and can interpret its actions. Birds always travel by night across the sea, working their way along the coast till a proper wind is blowing, and flying against any light which may appear on the shore. In the days of the old watchmen at Brighton, small birds used frequently to fly against the lanterns which they carried."

Herr August von Pelzeln, of Vienna, informs us that, among the collections formed during the late exploring expedition of the 'Novara,' which have recently arrived at the capital, are "large numbers of bird-skins. Among these are an interesting and tolerably numerous series from the Nicobar Islands, some rare birds from the smaller Pacific Islands, and many from India and the Sunda Islands. Among the latter is a species of Bonaparte's genus *Diardigallus*. The collection of skeletons and birds in spirits is of great value; and there are also a considerable number of nests and eggs."

Mr. W. Llewellyn, of Penllegare, writes that he shot a specimen of *Aëdon galactodes* (the Rufous Sedge Warbler of Yarrell's Second Supplement) at Start Point, in Devonshire, in the month of September last. A very strong south wind had prevailed for nearly a week previously. The bird was not observed until it was shot, at which moment it was flying over a stone wall, within a hundred yards of the sea. It was excessively thin, and had lost its tail. The specimen was sent to the British Museum, where it is now preserved.

We find that the occurrence of this example has already been noticed in the 'Annals and Magazine of Natural History' for November last (ser. 3, vol. iv. p. 399).

To the Editor of 'The Ibis.'

Jardine Hall, Dec. 13, 1859.

My dear Sir,—Having noticed your observations ('Ibis,' i. p. 322) upon the *Euphonia cyanodorsalis* of Dubois, I have examined the specimen, alluded to as in my collection, procured by Mr. Skinner. It agrees exactly with your description of *E. occipitalis* ♀ (Proc. Zool. Soc. 1856, p. 270), and also with the figure in DuBus's Esquisses Ornithologiques. On comparing my specimen with the figure of *E. cyanodorsalis* in the 'Rev. Zoologique,' the position of the blue spot upon the head answers to the term '*occipitalis*,' the front of the spot being in a line with the posterior angle of the eye. In Dubois' figure the spot is placed on the centre of the crown. Skinner's bird appears to be correct as you have named it; and its range will extend from Guatemala to Mexico, as Dubois mentions having also received specimens of it from that country.

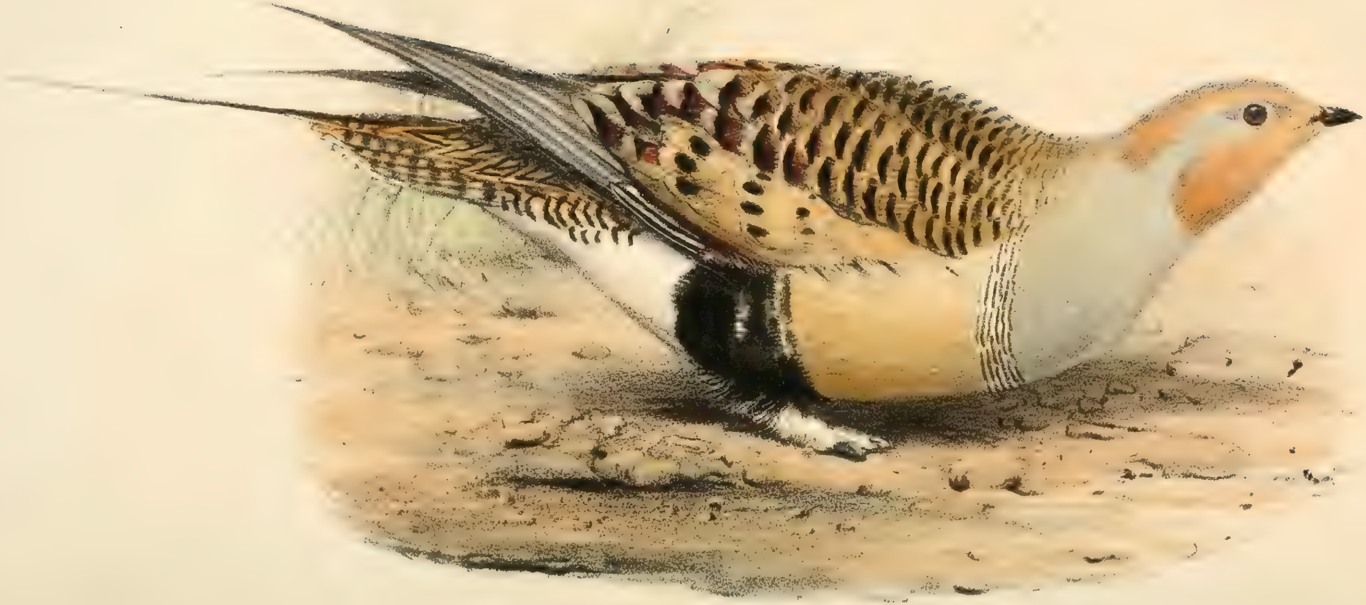
Believe me sincerely yours,

Wm. Jardine.

In reply to a question about the specific validity of *Ictinia mississippiensis*—a bird wanting in the very full series of *Accipitres* belonging to the Norwich Museum—Mr. John Cassin, of Philadelphia, writes as follows:—" *Ictinia mississippiensis* is certainly different from *I. plumbea*, though like that species. It is larger and more lightly coloured, and always has the secondaries widely tipped with very pale ashy, nearly white. The adult has the tail black, without any trace of white bars. *I. plumbea* has always (I believe) transverse white bars on the tail, and the tips of the secondaries not marked as in *I. mississippiensis*, but uniform. It is also smaller; and specimens are generally much more darkly coloured than in *I. mississippiensis*, especially on the under parts, though I have seen one or two that were nearly as light, and had the head nearly as pale. There are transverse bars on the tail in all specimens I have seen of *I. plumbea*. There are six specimens of *I. mississippiensis* in the Academy's collection, including Alexander Wilson's original. Three of these (♂ ♀ et juv.) are from New Mexico, obtained by Dr. Woodhouse, and two are without labels. Four examples of *I. plumbea* are all from South America."

It is curious that all Mexican *Ictiniæ* which we have seen (collected by Sallé, Boucard, &c.) have belonged to the *I. plumbea*, of which there is also a specimen in the British Museum, said to be from North America. Of *I. mississippiensis* there is one specimen in the same collection, agreeing with Mr. Cassin's differential characters.

We hear of several important additions to Ornithological literature in progress at the present moment. M. O. DesMurs is engaged on a 'Traité d'Oologie,' being a general work on that interesting subject. Dr. Hartlaub, of Bremen, is occupied on a Synopsis of the Ornithology of Madagascar, in extension of his 'Gegenwärtiger Standpunkt der Ornithologie Madagascars,' published in D'Alton and Burmeister's 'Zeitung für Zoologie, Zootomie, und Palæozoologie' in 1848, and has met with several rich sources of new materials. Professor Schlegel, of Leyden, has just completed a review of the genus *Corvus*, with figures, for the Society 'Natura artis Magistra' of Amsterdam; and Sir William Jardine and Mrs. Hugh Strickland are preparing for publication a further portion of the late lamented Mr. H. E. Strickland's Ornithological Synonyms.



THE IBIS.

No. VI. APRIL 1860.

XI.—*On the Addition to the British Fauna of* Pallas's Three-toed Sand-Grouse (*Syrrhaptes paradoxus*). By Thomas John Moore, Keeper of the Free Public and Derby Museum, Liverpool*.

(Plate IV.)

The acquisition of a species new to the British Avi-Fauna is always an interesting event. In the present instance that interest is considerably increased by several important considerations. The species named at the head of this paper is not only new to Britain, but also, I believe, to Europe; for, though more than once inserted by Prince Bonaparte in his Lists of European Birds, no instance to warrant its insertion has yet been put on record. The family to which it belongs, being especially adapted to inhabit dry and arid plains, has no representative in Britain, although two species occur on the Continent (*Pterocles alchata* and *Pt. arenarius*). The genus consisted of the single species inhabiting the steppes of Tartary, made known by Pallas three-quarters of a century since, until in 1850 Mr. Gould figured and described a second, obtained by Lord Gifford on the banks of the Tsumureri Lake in the country of Ladakh, under the name of *Syrrhaptes tibetanus*. Of the latter only a single specimen was shot by Lord Gifford; but other examples have since been collected by Captain Speke, and it has also been observed by

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* Communicated by Mr. Moore to the late Meeting of the British Association at Aberdeen, and read to Section D.

Dr. Adams. The former is still rare in collections. Its occurrence, therefore, in the living state in this country cannot be regarded otherwise than as an important event in the annals of British Ornithology. It is with great pleasure that, by the permission of the Committee of this Institution, I am enabled to bring under the notice of the British Association a remarkably fine adult male specimen lately shot in Wales.

This bird was received at this Museum on the 12th of July last, '*in the flesh*,' that is to say, recently dead and not yet skinned. It was in excellent feather, and presented only very slight traces of shot-marks about the head. It had evidently been dead a day or two, as the body was beginning to smell and the feathers to become loose: the eyes also were shrivelling up, and were too far gone to determine their colour, except that it was very dark.

It was immediately placed in the hands of Mr. Butterworth, a skilful taxidermist of this town, who succeeded admirably in skinning and stuffing it, although, as I subsequently learned, it had been dead fully three days, during which the weather was excessively hot, and favourable to decomposition.

Dr. Collingwood, Lecturer on Botany at the Liverpool School of Medicine, kindly examined for me the contents of the proventriculus and gizzard. He found therein turnip-seed and unripe seeds of the Furze (*Ulex*) only, and no trace of insect food.

Our Museum is indebted for this valuable donation to Mr. Thomas Chaffers, of Great Howard Street, Liverpool, the bird having been shot by a labourer on a farm held by him on the estate of T. Madoc, Esq., called Portreuddyn Farm, situate near Tremadoc, at the north end of Cardigan Bay, on land reclaimed from the sea.

The account given to Mr. Chaffers by Owen Quin, the labourer alluded to above, and subsequently also to myself, on a visit made by Quin to the Museum, is as follows:—

On Saturday, July 9, he was engaged 'scuffling' turnips in a field at Portreuddyn Farm, called the Trath. This field consists of loamy sand, is close to the river Glasslyn, and one mile from the sea at Portmadoc. About three o'clock in the afternoon he heard at a short distance a cry with which he was not familiar. On looking attentively in the direction from which it proceeded, he observed three birds running about and pecking among the drills, and making what he described as a "chattering whistling" noise. They were then all three together, and, so far as he could observe, all three alike. Having fortunately, under a hedge near at hand, a gun with which to shoot rooks from an adjoining potato field, he fetched and loaded it. By that time two of the birds had gone some forty yards further off. These he thought he could kill at one shot, but to get near enough must have passed and alarmed the single bird and probably the others. He therefore wisely contented himself with aiming at this, fired, and killed it. Having only a single-barrelled gun, he could not get a shot at the other birds, which flew swiftly away at a height of thirty or forty feet direct eastward across the river into Merionethshire, effectually preventing him from following them. Another man was working in the field at the time, but saw nothing of the birds until the dead one was shown to him. Mr. Chaffers has since made numerous inquiries, but has been unable to hear of any person having observed them either before or after their appearance in his field as related above.

The *Syrrhaptes paradoxus*, as already stated, was first made known by Pallas, who described and figured it under the name of *Tetrao paradoxa* *. It agrees with other species of Sand-Grouse in its general form, in its lengthened wings, and in the shortness of its feet; but differs from them in the first primary of each wing terminating in a long filament like the two central tail-feathers of several species of Sand-Grouse. The most essential differences, however, are in the legs and feet. The legs, instead of being feathered only in front, are entirely covered down to the extremity of the toes with short dense feathers; the hind toe is wanting; the toes in front are much expanded, being united together throughout their length, and forming a broad flat foot the sole of which is thickly covered with strong horny papillæ: they are terminated by equally strong broad and flattened nails.

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* See Pallas, Itin. ii. App. p. 111, tab. F.; Zoograph. Rosso-Asiat. ii. p. 74.

Linnæus included the Sand-Grouse known to him along with the true Grouse in his genus *Tetrao*. In 1809 Temminck proposed to separate them, and established the genus *Pterocles* for their reception. In 1811 Illiger proposed to separate from these again the bird discovered by Pallas, in a genus which he named *Syrrhaptes*. Other generic and specific names have since been proposed; but the bird is now generally referred to as *Syrrhaptes paradoxus*.

Unfortunately very little is known of the habits of the *Syrrhaptes*. M. Delanoue, in the 'Dictionnaire Classique d'Histoire Naturelle,' vol. viii. p. 182, describes their walk as slow and laboured; their flight as rapid, direct and elevated, and but little sustained. "The nest is composed of the down of grasses placed among sand and stones under a bush. The eggs are four in number, of a reddish-white colour, spotted with brown. The female quits her nest only at the last extremity. The Khirghiz call these birds *Buldruk*, and the Russians *Sadscha*."

Dr. Edward Eversmann, in the first volume of Cabanis's 'Journal für Ornithologie,' tells us that this *Syrrhaptes* "inhabits only the steppes eastwards of the Caspian Sea as far as the Soongarei. In the west it never passes further to the north than lat. 46°. But eastwards it ranges into higher latitudes, being found also on the high steppes of the Southern Altai Mountains, on the upper course of the Tschuja, in the neighbourhood of the Chinese outposts. The Mongols there call it *Nukturu*; the Dwojedanzes, *Altin*; the Kirghiz Tartars on the Aral Sea, *Buldruk*." Eichwald, in his 'Fauna Caspio-Caucasica,' merely alludes to the presence of this bird on the eastern side of the Caspian Sea.

The only localities which have come under my notice whence the species has been obtained, are the following:—The Kirghiz Steppe, whence Pallas's specimen* and a male and female in the Derby Collection were procured, the Gobi Steppe, and Bucharia.

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* Pallas says, "In arenosis deserti Kirgisici circa arenas *Dshidel-mamut*, a Rytschkofio vivæ adlatæ, exuviæ rectricibus carebunt; neque præterea a quopiam nostrorum observata fuit hæc avis curiosissima, quam Kirgisotartari pulverisatam contrà insaniam commendant."—Zoograph. ii. p. 75. —Ed.

Bonaparte, I believe, is the only author who has included it in the European list. In his 'Geographical and Comparative List of the Birds of Europe and North America,' published in 1838, it is placed as No. 281, and "Eastern Europe" given as its locality. Schlegel, in his 'Revue Critique des Oiseaux d'Europe,' 1844, p. 90, confesses himself ignorant of the reasons which led the Prince to insert it, and therefore excludes it. In another list, 'Conspectus Avium Europæarum,' appended by Bonaparte to his 'Revue Critique de l'Ornithologie Européenne de M. Degland,' 1850, he himself omits it. But in the 'Catalogue des Oiseaux d'Europe,' published by M. Parzudaki in 1856, it again appears, though with a query.

To this last list Prince Bonaparte specially solicited the criticism of M. de Selys-Longchamps of Liége, and of M. de Filippi of Turin,—the former of whom, writing in the name of both, enumerates it with others as being included in error, or without sufficient warrant; and although Bonaparte, in his rejoinder to this critique, insists upon the claims of several of those questioned by M. de Selys, he does *not* defend the cause of the *Syrrhaptes*[*]. Its claim to be inserted in the European list can now no longer be questioned; for, in addition to the specimen exhibited, another was killed about the same time in Norfolk for the knowledge of which I am indebted to Mr. P. L. Sclater and Mr. A. Newton, but am possessed of no other information than that it was forwarded to Mr. Leadbeater, of London, for stuffing[†]. That it was out of the same original flock as the Portreuddyn specimen cannot be doubted; and it will be extremely interesting to compare the dates of their capture. That others have fallen on their route from Tartary is of course most probable; it is to be hoped that they may have passed into the hands of ornithologists, and that the facts may be made known.

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[*] Vide 'Revue et Magasin de Zoologie,' 1857, pp. 56, 117 & 134.

[†] Of this specimen an account has already been given in 'The Ibis,' vol. i. p. 472. A third specimen, also an adult male, "was shot on the 23rd of July last, near Hobro, in Jutland; and it is stated that another example was observed, but not killed, about the same time, some few miles from the same locality."—*Zoologist*, 1859, p. 6780. This bird is now, as we are informed by Mr. Alfred Newton, in the Museum of the University of Copenhagen. By a letter from Prof. Schlegel, of Leyden, we learn that a pair of this same bird were observed in the Dunes near that city in August and September last, and that one of them was obtained.—Ed.

Liverpool Free Public and Derby Museum,
September 14, 1859.

XII.—*On Birds collected or observed in the Republic of Honduras, with a short Account of a Journey across that country from the Pacific to the Atlantic Ocean**. By GEORGE CAVENDISH TAYLOR, F.R.G.S. Part II.

[Continued from page 24.]

1. HONDURAS MOCKING-BIRD. (*Mimus gracilis.*)

I did not observe Mocking-birds anywhere except on the plain of Comayagua. They were very pugnacious, and drove all other birds away from their vicinity.

2. BLUE BIRD. (*Sialia wilsoni.*)

Blue-birds were common among the pine-trees, on the high ridges, throughout the line of country we traversed.

3. HOODED WARBLER. (*Myiodioctes mitratus.*)

The only one seen was in an orange-grove adjoining the town of Comayagua.

4. PAINTED FLY-SNAPPER. (*Setophaga picta.*)

This bird was obtained by Mr. Edwards near Comayagua.

5. DOMINICAN PURPLE MARTIN. (*Progne dominicensis.*)

Swallows were common, especially at Comayagua and in the neighbourhood of churches.

I shot one on the wing, while standing in the Plaza, in front of the Cathedral in Comayagua, to the great astonishment of many of the inhabitants, who had evidently never before seen anything shot while in motion. It measured 7 inches in length and 13½ in extent. Eyes dark; beak, legs, feet, and claws black; chin and throat grey; under surface of body white; whole upper surface, wings, and tail steel-blue; tail forked; 12 tail-feathers.

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* The scientific names used in this list are those adopted in Messrs. Sclater and Salvin's article on the Ornithology of Central America, in 'The Ibis,' 1859.

Small brown Martins, not unlike English Sand-Martins (probably *Cotyle serripennis*), were also common. Near San Pedro I saw also a number of small Black Swifts (*Chætura*?) about the size of the Palm Swifts of Jamaica.

6. CEDAR BIRD. (*Ampelis cedrorum.*)

The only one I noticed and shot was at Siquatepeque.

7. BLACK-HEADED ORANGE-EATER. (*Saltator atriceps.*)

Not uncommon near Comayagua, which was the only locality where I observed them. I shot several, generally while feeding in the tops of orange trees. The feathers of the head were usually besmeared with the juice of oranges and other fruits.

8. SCARLET TANAGER. (*Pyranga æstiva.*)

I shot one, a female, in an orange garden at Comayagua. They were frequently observed in other places; but I had no opportunity of obtaining more specimens.

9. RED-BACKED TANAGER. (*Rhamphocelus passerinii.*)

Common near the Atlantic coast.

10. BLUE TANAGER. (*Tanagra diaconus.*)

Obtained by Mr. Edwards during his first visit to Honduras.

11. BLUE-HEADED TANAGER. (*Tanagra vicarius.*)

I shot one near the Lake of Yojoa, and saw several more. I believe they are not uncommon.

12. RAINBOW FINCH. (*Spiza ciris.*)

I saw and shot one of these beautiful birds in a garden near Comayagua.

13. GREAT CACIQUE. (*Cacicus montezumæ.*)

First seen at Taulevi; and from there to the Atlantic they were very common. Sometimes they were single or in pairs, but more often in small companies. They were usually very tame, and would climb unconcernedly about the trees within a few feet of us.

14. GOLDEN BANANA BIRD. (*Icterus gularis.*)

This is probably the most beautiful bird in the country. They were very abundant on the Pacific Slope. I did not see so many on the Atlantic side. They are fond of feeding on the fruit of the cactus; and the feathers on the head, and the interior of the gullet and stomach, are often deeply stained with its crimson juice.

15. GREAT CROW-BLACKBIRD. (*Quiscalus macrurus.*)

Common, and always to be found in and about the villages. They appear to be polygamous, as the male birds are generally attended by several females. A very fine male bird and his accompanying females used to frequent the court-yard of the Honduras Railroad Agency House in Comayagua, where we lived. They generally sat either on the roof of the house, or among the upper branches of some orange trees which grew in the yard. They had a most peculiar cry, not unlike the noise produced by the sharpening of a saw, only more prolonged.

Gosse's account of the manners and note of the Tinkling Grackle is applicable to this bird. I shot also at Comayagua a small Crow-Blackbird, in size and general appearance like the Tinkling Grackle. These, or other black birds, with shorter tails, resembling Starlings, were often seen in large flocks near the villages, and at sundown would collect in black masses on the tops of low trees close to the houses.

16. MEXICAN RAVEN. (*Corvus cacalotl?*)

I saw two Crows of a considerable size on the top of a lofty pine tree, growing on the highest ridge of mountains between Opotelma and Siquatepeque, near 5000 feet above the sea. If my mule had not been refractory, I should have shot one.

17. BLACK-HEADED BLUE JAY. (*Cyanocorax melano-cyaneus.*)

The only place where I saw these birds was in the pine trees on the elevated plain between Siquatepeque and Taulevi. They appeared to be tolerably plentiful.

18. SMALL CRESTED BLUE JAY. (*Cyanocitta coronata.*)

The above remarks are equally applicable to this bird. After I left the country, Mr. Edwards obtained several specimens of both species.

19. GREEN AND YELLOW JAY. (*Cyanocorax guatemalensis.*) Several specimens were obtained by Mr. Edwards after I left the country.

20. CRESTED BLUE JAY: (*Cyanurus gubernatrix.*) Plentiful in Tigre Island, and all the way from the Pacific coast to the mountains north of the plain of Comayagua, after passing which I saw no more of them; their place and duties being then taken up by the Brown Jay (*Psilorhinus morio*). They were a continual nuisance, being omnipresent, and positively haunting our path. Every bough was full of them, eternally shrieking and chattering. As we rode along they followed us, from tree to tree, until we reached another troop of them, who in their turn would take up the pursuit. When out shooting, they would pursue me in the same way, flying over my head and betraying my presence by their chattering. The birds in Honduras are seldom shot at, and consequently are not wary; otherwise these Jays would have effectually put them on their guard.

The squeak of a penny trumpet, which I often carried in my pocket, would quickly assemble dozens of them from the recesses of the woods, even if, at the time I sounded it, there were none within my sight or hearing.

21. BROWN JAY. (*Psilorhinus morio.*) This Jay was first seen at Taulevi, and thence to the Atlantic was very common, generally to be seen or heard shrieking in the bushes by the road-side; but the experiment of the penny whistle was not equally successful with them. From the time they were first met with, I *never saw one* of the preceding species. I regret I had not time to preserve the skin of one of them.

22. THE MEXICAN LARGE-BILLED TYRANT. (*Scaphorhyncus mexicanus.*) I did not observe this bird before I got to Taulevi; but afterwards it was not uncommon.

23. GREY TYRANT. (*Tyrannus melancholicus.*) Common; usually to be seen in the evening, sitting on the tree-tops and facing the wind.

24. Yellow-bellied Tyrant. (*Myiarchus laurencii.*)

Obtained in Tigre Island.

25. Black-headed Long-tailed Tyrant. (*Milvulus monachus.*)

This bird was first seen by me on the plain of Comayagua, near Langui. Afterwards I saw great numbers at Agua Azul, near the Lake of Yojoa, where I obtained several specimens, as they were sitting on the tree-tops about sundown. The tail-feathers of some are nearly 12 inches long.

26. Grey-headed Long-tailed Tyrant. (*Milvulus forficatus.*)

At Langui these birds were very plentiful; and I also saw them, in fewer numbers, in other localities. The best time to obtain these and all the other Fly-catchers was in the evening, just before roosting-time, when they would assemble on the tops of favourite trees, and remain until nearly dark. They then go off into the woods. I generally observed this and the preceding species on open ground not much encumbered by trees or brushwood.

27. Ground Night-runner. (*Nyctidromus* —— ?)

I obtained two species of this genus in Tigre Island, and also saw them at Comayagua. They make a great noise, and fly about under the trees after insects. They are easily distinguished when flying, by the white marks on their wings. Directly they pitch on the ground they are invisible. One evening when I was out bird-shooting in Tigre Island, perhaps half an hour before sunset, I saw a great number, hunting moths over a large piece of cleared ground. There must have been some hundreds of them. Their pace was great, like that of the swiftest Hawks, and their flight not unlike that of Swallows. All birds of this genus are very difficult to skin, as their skins are very tender, and their bodies are generally very fat and greasy; they are, however, not so bad in this respect as Trogons.

28. Blue-headed Humming-bird. (*Cyanomyia cyanocephala.*)

Occasionally seen, but not common. Obtained at Siquatepeque.

29. Brown Humming-bird. (*Amazillia corallirostris.*)

This Humming-bird, of very plain plumage, is the only one which I observed in any numbers, and that only in certain localities. There were some in Tigre Island, and I saw them here and there in our march across the country. I found them most abundant near Comayagua, 1900 feet above the sea. They were very plentiful on the plain near the town, and not far from the Campo Santo, where the ground was tolerably open, and the cactus grew abundantly. There I observed hundreds hovering about the flowers of the cactus.

Upon the whole I saw very few Humming-birds in Honduras, and fewest on the Pacific Slope. They are probably more numerous on the Atlantic side, where there is more vegetation and more flowers, and the atmosphere is more humid. In Tigre Island there were but few flowers in the woods, and Humming-birds were scarce. They were usually in lofty trees, where it was very difficult to see them, and still more so to find them when shot; for they fall into the thick bushes, and are so small that a leaf covers them; besides, if not picked up at once, a big ant may carry them off. Many that I shot I was unable to find. It is also by no means easy to kill them so as to obtain good specimens. I have never found anything but *very small* shot answer this purpose; and even then one may have to kill several before obtaining a specimen that will yield a really good skin. When in Jamaica, I made several experiments in shooting Humming-birds. I could get no fine shot (which, by the way, is an article very difficult to obtain except in large towns), and was therefore obliged to look out for an efficient substitute. I first tried rapeseed; but it did not answer: it was too light, and had no power of penetrating, even with a large quantity of powder and at the shortest distance. Certainly, I sometimes killed birds when I used it; but I suspect that it was only when they were struck by the wadding, for they were so much damaged as to be useless. For every one I killed, at least three went off unhurt, although only a few feet from the muzzle. Then I tried emery powder, and that answered tolerably well. I killed some small birds with it, and that without materially damaging their plumage, but it did not appear to be effective beyond 15 feet or thereabouts.

I have heard persons recommend *water* for knocking down Humming-birds. It may answer, but requires an old gun, and Humming-birds to be far more plentiful than I ever found them. Moreover, very close quarters are needful. The Humming-birds I used to shoot were often high up in trees. Now, if water is to be used, it is obviously essential to success that Humming-birds be plentiful, and that they frequent flowers in a garden, or low bushes and shrubs, so that one can approach very close; and in such situations they may be more easily caught in a butterfly-net. Moreover, when a gun is charged with water, it will not do to wait half an hour or more for a chance of discharging it. In Jamaica I found great difficulty in securing good specimens of the minute Vervain Humming-bird (*Mellisuga humilis*), and still more in the case of the Long-tailed Humming-bird (*Trochilus polytmus*), whose long tail-feathers were liable to be cut by the shot, while the remainder of the plumage was left uninjured.

I recommend all persons going on bird-shooting expeditions to take with them a good supply of the finest shot procurable. I suffered great inconvenience from the want of it. Large shot is generally to be obtained in abundance.

30. THE WHITE HUMMING-BIRD. (*Thaumatias candidus.*)

I saw but very few specimens of this Humming-bird. The three species here mentioned are the only *Trochilidæ* that came under my notice while in Honduras.

31. BLACK-CHINNED JACAMAR. (*Galbula melanogenia.*)

I did not see these birds until near the Atlantic coast, where they were pretty common and very tame. They were generally seen sitting on low bushes, ready to dart on any insects that might come in their way. They are easy birds to preserve, as the skin is tough and comes off without difficulty. Waterton gives a good description of them in his 'Wanderings.'

32. BELTED KINGFISHER. (*Ceryle alcyon.*)

Seen on several occasions, but they were wild, so I was unable to obtain a specimen.

33. Small Green-and-white Kingfisher. (*Ceryle americana.*)

Is about the size of our English Kingfisher. I saw several of them at the Lake of Yojoa.

34. Flat-billed Motmot. (*Prionirhynchus carinatus.*)

The only bird of this species I saw was in the densest part of the forest between Taulevi and the Lake of Yojoa. It was sitting on a low branch of brushwood beneath some lofty Mahogany trees. I had some difficulty in shooting it without running the risk of entirely destroying the plumage. This I found to be a very common occurrence; for the forest is so dense that often one cannot see birds unless close to them, and they are so tame that they do not care to move. The difficulty consists usually, not in approaching birds, but in getting sufficiently distant from them to shoot, and at the same time keeping them in sight.

I have every reason to remember this bird; for I skinned it by the roadside, on the saddle of my mule, being subject to the attacks of myriads of mosquitoes—so much so that I was several times on the point of throwing it away. As it is the only example known of the species, besides one at Brussels, I am glad I did not carry my intention into effect. I saw no other *Momotidæ* in Honduras; but Mr. Edwards obtained near Comayagua the Azure-browed Motmot (*Eumomota superciliaris*) and the Blue-naped Motmot (*Momotus lessoni*). He found them plentiful, and on one occasion saw seven sitting together on the same bough.

35. Graceful Trogon. (*Trogon elegans.*)

I saw several of these birds in the forest on the plain of Comayagua, and have no reason to suppose that they are otherwise than common.

36. Black-headed Trogon. (*Trogon melanocephalus.*)

This Trogon was common in Tigre Island. I also obtained it near Taulevi. Trogons are very difficult birds to skin, their skins being as tender as damp tissue-paper, and their feathers dropping off at the slightest touch, even as they fall to the ground. These birds are usually seen sitting motionless on the lower branches of trees, generally in dense and shady thickets, and are to be shot without difficulty. The Quesal (*Pharomacrus paradiseus*) is, I believe, found in the lofty mountains to the south and east of the plain of Comayagua.

After I left the country, Mr. Edwards returned to Comayagua. He ascended these mountains, and found a tableland at the top, covered with forests of high trees, and little or no underwood. He there saw monkeys, and many species of birds which we had not met with on the plain below. He also saw the long tail-feathers of the Quesal lying on the ground; he showed them to an Indian hunter who was with him, and was told by him that he had often shot them. This I consider to be conclusive evidence.

The forests of Honduras are so extensive and dense, that it requires a long residence to explore them satisfactorily, and there is no saying positively what tropical birds may not be found in them.

37. Long-tailed Cuckoo. (*Piaya thermophila.*)

Common. They frequent localities where the brushwood is thick and the trees are moderately high; they are showy birds, and easily skinned.

38. Ground Cuckoo. (*Piaya erythropygia.*)

The only bird of this species which I saw and shot was not far from Yojoa. It was very tame, and walking beneath brushwood on some very stony ground. I could not get a fair distance from it, so was obliged to shoot when too close. The skin was consequently so damaged that it became spoiled by the heat of the weather before I had a chance of preserving it.

39. Yellow-billed Cuckoo. (*Coccyzus americanus.*)

I shot a Cuckoo in Tigre Island closely resembling a specimen of this species obtained in Jamaica.

40. Savannah Blackbird. (*Crotophaga sulcirostris.*)

Very common everywhere and very tame. To be seen in small companies, from five or six to a dozen, sitting on fences and low bushes. Perhaps the most common bird in Honduras. Its habits resemble those of *C. ani*, as described in Gosse's 'Birds of Jamaica.'

41. COLLARED TOUCAN. (*Pteroglossus torquatus.*)
The only Toucan I saw and shot was on level ground not far from Omoa, where the forest was dense and the trees were lofty. I heard the cry of a strange bird in a thick tree, and stopped my mule; but it was some time before I could distinguish it sufficiently to shoot. It was the last bird I shot in Central America. I heard the cries of more at the same spot, and have no doubt that Toucans of various species are common on the Atlantic coast. Mr. Edwards saw a pair of Toucanets near Yojoa.

42. GUATEMALAN WOODPECKER. (*Dryocopus guatemalensis.*)
Not common. The one I shot was near San Pedro. This bird has a long red crest—in the female black on the forehead and red behind.

43. SCAPULAR WOODPECKER. (*Dryocopus scapularis.*)
Common, especially in Tigre Island. It is smaller than the preceding; and its chin is striated with white and black.

44. BARRED WOODPECKER. (*Centurus santacruzi.*)
Very abundant wherever I went, and the most common of any *Piciдæ* in Honduras. They are very fond of feeding on the fruit of the cactus.

45. YELLOW-BELLIED WOODPECKER. (*Picus varius.*)
I shot this species in some pine trees near Siquatepeque.

46. JARDINE'S WOODPECKER. (*Picus jardinii.*)
Shot near the same place as the preceding.

47. CINNAMON WOODPECKER. (*Celeus castaneus.*)
I saw only two of this species; they were near Potrerillos, on the Atlantic slope.

48. RED-AND-BLUE MACCAW. (*Ara macao.*)
This Maccaw is plentiful throughout the whole country, and generally to be seen in pairs, but sometimes in companies of from six to twelve. I have seen as many as thirty together about roosting-time, flying towards some lofty trees situated in the forest, which no doubt they were in the habit of fre-

quenting at night, having assembled for that purpose. They are in the habit of feeding in the maize fields, morning and evening, and are not difficult of approach. If one is wounded, its shrill screams attract others, and they wheel overhead, giving opportunities for fresh shots. In this way I shot three within five minutes, from the back of my mule, and without moving from one spot. This was near Comayagua. They are strong on the wing and high-flyers. Their brilliant plumage and long tails have a splendid effect in tropical forest scenery, forming a strong contrast to the deep green of the foliage, and a brilliant addition to the landscape. I have seen them up in the pine-ridges, and recollect riding beneath a pair sitting so close together on the branch of a pine tree overhanging the road, that I could have killed both at one shot. They were abundant in Tigre Island. I there shot one out of a flock of seven flying over my head. He was only winged; and I did not know how to handle him so as to save my fingers. I did not like to rap him on the head, lest I should spoil his plumage; so I got his head into a noose of my pocket-handkerchief, and brought him into the house—not in silence, for he screamed most vociferously. When there, the difficulty was to kill him. Some long pins were thrust into his head, but the only effect was to make him more lively and to squall the louder. At last I dipped a feather in nitric acid; and while he was in the act of climbing up a bedstead, and screaming with beak wide open, I popped it down his throat. He released his hold of the bedstead, gave a few kicks and struggles, turned on his back, and died.

49. BROWN-BREASTED GREEN PARRAKEET. (*Conurus astec.*) Shot near Comayagua, and not uncommon.

50. GREEN PARRAKEET. (*Conurus petzi*?)
Common. Obtained on the Pacific Slope. Parrakeets are very numerous in Honduras, but they appeared to resort more to the recesses of the forest than to the vicinity of habitations. They fly high, and very fast, with a quick motion of the wings, screaming all the time, often wheeling in the air like flocks of Sandlarks. Parrots have a much slower flight, and slower flapping of the

wings. Maccaws fly very high. Their flight is slower than that of either of the preceding, and the motion of the wings is slow and heavy. Still they are powerful-winged birds, and may often be seen flying over a widely intervening space between high mountains. Parrots and Parrakeets are good for food; but good cooking is indispensable to make them palatable, and that is rarely met with in Honduras. I never tasted Maccaws; but the natives ate those I shot.

This species measures 9 inches in length. Irides yellow, yellow skin round the eyes bare of feathers; beak white, forehead yellow, top of head blue; upper surface of body bright green; quill-feathers bright blue, green at the bases; under part of body greenish-yellow; tail-feathers green; feet and legs whitish.

51. Little Green Parrakeet. (*Psittovius tovi.*)

I observed flocks of this species in Tigre Island, but not near the habitations.

52. Small Green Parrot. (*Chrysotis albifrons.*)

The only place where I saw this species was between Yojoa and San Pedro. They were assembling in numbers at roosting-time, when I procured a specimen.

53. Yellow-naped Green Parrot. (*Chrysotis auripalliata.*)

Very plentiful in Tigre Island, but I did not observe it elsewhere, nor did I see any large Parrots after I left the coast until I arrived at Yojoa, where there is a Parrot much resembling this in plumage, but rather smaller, with the yellow on the fore part of the head instead of behind. They were flying in great numbers towards their roosting-places, and passed close overhead; but it was unnecessary to shoot one, as I saw many in the town in a state of domestication. In common with the other *Psittacidæ*, they are very noisy early in the morning and in the evening. At these times they feed in the maize fields, and are easily shot. In Tigre Island I have seen them fly so close to the house that I could have shot them from the windows. They sit on the trees like pigeons, and do not appear to be frightened by the report of a gun. When they are in the tree-tops it is difficult for any one standing beneath to perceive them, as their green plumage cannot be distinguished from the foliage. I have often stood beneath a tree full of them, without being able to see one. They roost in flocks. They have favourite roosting-places among lofty trees, where they assemble just before dark, and may be seen making for these common centres in great numbers, chattering and screaming as they fly.

[To be continued.]

XIII.—*On the Nidification of certain Birds in North-eastern Africa.* By Baron Richard König von Warthausen.

(Plate V.)

In the following paper, the friends of Oology will receive descriptions of the eggs of certain birds of North-eastern Africa. They are nearly all as yet undescribed, and may prove to be of greater interest from the fact that most of them belong to species common to the European Fauna. Some of them came into my possession through the special kindness of Dr. Theodor von Heuglin, Austrian Consul at Chartum in the Sudan, who, also, has drawn the figures to illustrate the paper*; whilst the other specimens were collected by Herr Emile Wilke for me, and under the direction of Dr. Theodor von Heuglin.

I have used the old French duodecimal measurement in my descriptions.

1. Falco tanypterus, Licht. [*F. cervicalis,* A. Brehm et Heuglin (non Licht.): *F. biarmicus,* Brehm in Naumannia (non Temm.).]

This bird breeds in Egypt, on the Pyramids of Gizeh (Djiseh) and Dachschur, and on the Moxatam Mountains. Several nests, taken between the 14th and 26th of March 1858, contained from three to four fresh eggs. They are deposited, sometimes in a cleft on the naked stone, surrounded by a little sand only or by some small branches; sometimes in a deserted and restored nest of *Milvus parasiticus,* which bird breeds in the same localities. In other cases the bird itself builds a nest of branches, without much art, rather small and about 1½ inch deep. But few of the eggs are elongate in shape; some are strongly rounded, and most of them have a stout oval form. The longest out of sixteen specimens is 23½ lines long, 17¼ lines broad; the shortest and narrowest 21 lines long and 16¾ lines broad.

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* We much regret being unable to publish more than one of the nicely executed plates which were intended to illustrate Baron R. König von Warthausen's valuable paper.—Ed.

The eggs of this bird, compared with those of *Falco peregrinus* from Northern and Central Germany, North-eastern Russia, and the northern parts of America (*Falco anatum*, Bonap.), are generally lighter in colour, less red, and with more delicate markings. One specimen only, of a small size, is marbled with dark brownish-red; most of them are distinguished by a light ground-colour (sometimes dirty-white, sometimes brownish-yellow), and by fine, rounded, darker or lighter *yellowish*-brown spots, dots, and points. By the size alone, they cannot always be distinguished from those of the Peregrine, though they never attain to such a size as sometimes occurs in the eggs of that species. But there is a difference in the structure; for whilst the pores in the eggs of the Peregrine are less oblong and rather infundibuliform, those in the eggs of the present bird are more distinctly marked and serrated. The weight of the empty shell is between 58 and 73 grains.

The young birds are fledged in the beginning of May, and resemble those of *Falco lanarius*. Their tarsi have a remarkable dark bluish-green colour.

Three other eggs, strongly convex and taken from one nest*, differ from the former by their beautiful coloration and considerable size. They are 23¾ lines long, 18 or 19 lines broad, the ground-colour gradually changing from violet-red to flesh-colour and then to pale reddish-brown, with obsolete fine dots. At first I was inclined to consider these as a southern variety of the eggs of *F. lanarius*; but Heuglin assures me that this species does not breed in that locality, and that he has met with it in North-eastern Africa from October to March only. If this observation be correct, the eggs must belong to *F. tanypterus*, as it is impossible to refer them to *F. peregrinus*.

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* There were four eggs in this nest.

The notice of a pair of *Falco lanarius* having bred on the Pyramid of Cheops in May 1851 (v. Heuglin, 'System. Uebersicht der Vögel N.-O. Afrika's') is erroneous, as has been admitted by the author of that report.

2. Falco eleonoræ, Géné. (*Falco arcadicus*, Linderm.)

Heuglin observed four adult pairs of this bird in the Archipelago of Dahalak, on the 30th August 1857, on a reef formed by madrepores, and shot two pairs of them. All the adult birds which he observed or shot were, contrary to Bonaparte's account and figure, uniform fumigated-grey with a whitish hue and a lighter throat.

There were three nests found, two of which were situated below prominent rocks, immediately above the surface of the sea, at a height of about 30 feet. The third was in a cleft of a rock in the middle of the cliff. They were not true nests, but only rather shallow cavities on the sandy surface, and contained, the first, two young ones and one egg; the second, two young ones; and the third, one young and one egg.

The only egg in my possession is 16 lines long and 13½ broad, whereas Thienemann (Fortpflanzungsgesch. der Vögel, tab. 52. 8 *a*, *b*.), in accordance with the size of the bird, states the length to be 18½ lines and the breadth 15 lines. My specimen, which has perhaps been altered by incubation, is of a nearly uniform yellowish-white, slightly spotted with reddish. I conclude from its small size that it is not fully developed. It is covered with dirt, and too imperfect to determine its weight. Fragments of the eggs from which the young ones were hatched are more or less distinctly dotted and spotted with reddish-brown, the ground-colour being reddish-yellow. The shell is delicate, in grain intermediate between that of *Falco tinnunculus* and *Falco subbuteo*.

The young birds have white down, and the naked parts of a reddish olive-colour. They all died before the juvenile plumage was completed; in this state they very much resemble *Falco subbuteo*. A broad black moustache is very distinct; the upper parts are dark grey, the margin and tip of each feather being reddish-ferruginous; the lower parts are reddish-ferruginous, with dark-brown spots along the shafts.

3. Bubo ascalaphus*, Cuv. et Savign.

This species has been observed by Heuglin in Upper Egypt and Nubia in pairs and in small companies; it breeds also in Lower Egypt, where Wilke found two nests on the Pyramids of Abusir and Sakara on the 26th and 27th of March 1858. Each of the cavities scratched in the sandy surface, at a shadowy but not dark locality, contained three fresh eggs.

The eggs of the one brood are more elongate, those of the other more rounded; all having a very regular form, the greatest diameter passing through the centre, and the profile descending the poles sometimes in a more gentle, sometimes in a more abrupt elliptical curve. The length varies between 22 and 24 lines, the breadth between 18½ and 20; the largest specimen is 24 lines long and 20 broad, the smallest 22 long and 19 broad; the weight is 48 to 60 grains.

They differ from the eggs of *Bubo maximus* in their smaller size and finer grain. The largest specimens of *Syrnium aluco* do not attain to the size of the smallest egg of our species; whilst the largest eggs of *B. ascalaphus* equal those of *Surnia nyctea*. The eggs of the latter species, however, differ in their greater weight and in their grain, the tubercular prominences in our species being more separated and not quite so flat, and the pores being relatively larger and deeper, and sometimes forming congregated groups.

4. Sterna senegalensis, Swains.

Heuglin has brought home specimens of birds and of eggs of this species, hitherto known only from the mouth of the Niger, Senegambia, Ashantee, and Corisko. He found them on the shores of the Red Sea, south of the Tropic, where they breed on cliffs and islands near Souakin, on the Amarat Islands, and on other isles of the archipelago of Dahalak (that is, between 15° and 16° N.L.), and probably also further southwards.

The eggs were found in the end of July and in the beginning of August on flat coral-reefs, close to the beach, in shallow cavities of three inches diameter, sometimes without such a cavity, on pebbles of chalk or fragments of shells. Each of the nests, found on the 27th of July and the 1st of August 1857, near Amarat and Dahalak, contained two new-laid eggs. They have the elongate-ovate or the shorter and somewhat tapering form by which the eggs of *Sterna* are always distinguished. Their usual length is from 17 to 18 lines, their usual breadth 12 to 13 lines; the smallest specimens are $15\frac{1}{2}$ to 16 lines long and $12\frac{1}{2}$ to 13 broad; the largest ones 16 to 17 lines long and $13\frac{1}{2}$ broad; the longest ones 18 to $18\frac{3}{4}$ lines long and $12\frac{1}{2}$ to $13\frac{1}{2}$ broad. The broadest eggs are therefore the shortest, and the longest the narrowest.

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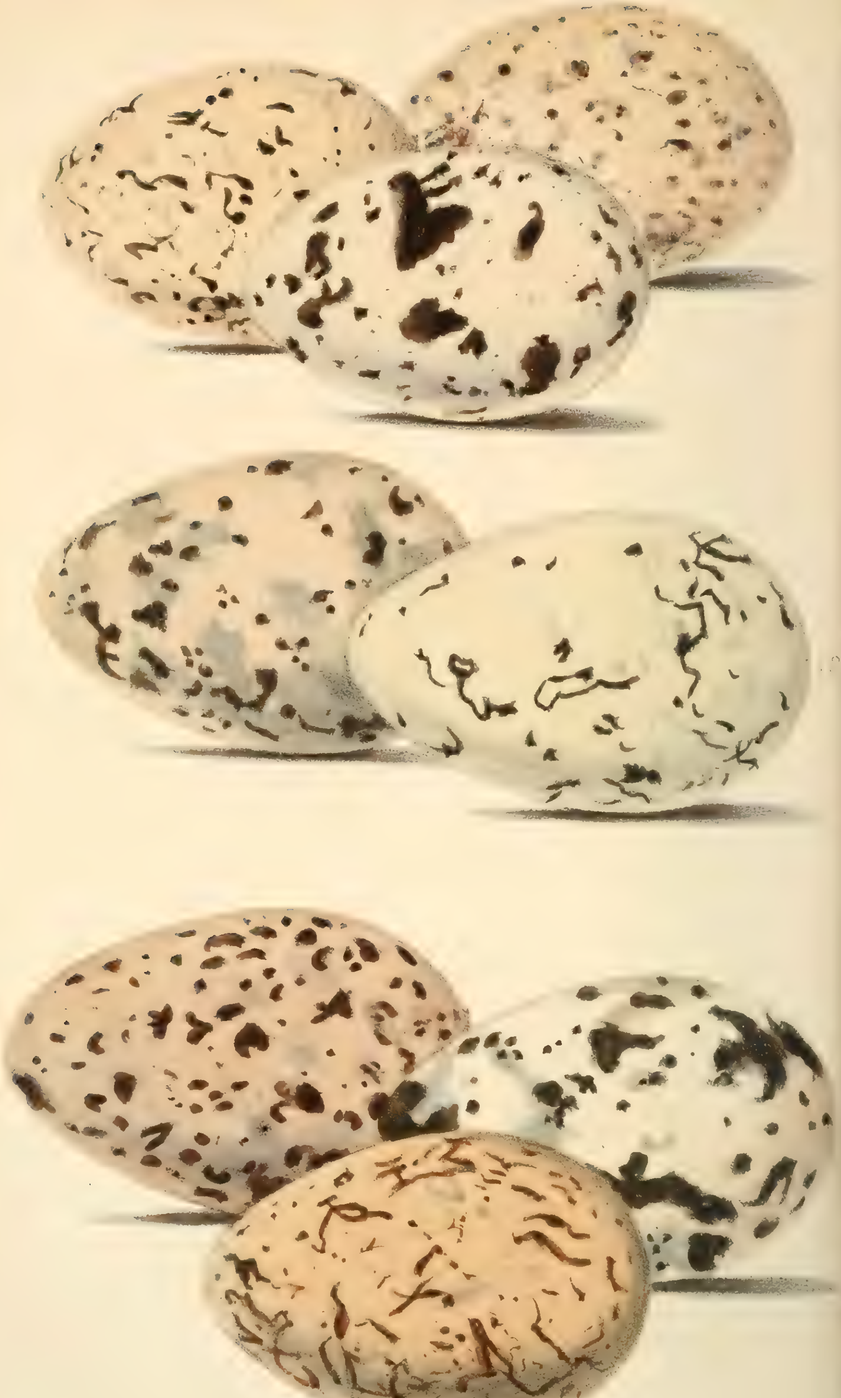
* *Bubo ascalaphus* of Egypt is very closely allied to, even if really distinct from, *B. bengalensis* of India.—Ed.

The shell is not shining, is very thin, and weighs from 16 to 19 grains; the surface is equally, finely, and prominently granulated. The ground-colour is greenish-yellow, greenish-grey, greyish-yellow, rarely light-brown or bluish-white, sometimes with a reddish shade. The spots are sparingly scattered over the shell, with sharp outlines, small, of a grey, brown, or blackish colour, the edges frequently having a violet hue; some of them are burnt-brown; the lightest ones are generally the largest, the darkest ones the smallest, in the form of points, streaks, and sometimes of lines. A few only out of about eighty specimens exhibit coarser spots; five are so dark as to resemble those of *Sterna hirundo*, and a single one has a uniform bluish greenish-white colour. They are all transparent bluish-green on the inner surface. Comparing them with eggs of other species of *Sterna*, we find the following differences:—

Their volume is twice or three times as large as that of the eggs of *Sterna minuta*, the coloration of both being exactly the same. Compared with the eggs of S. *arctica* and S. *hirundo*, they are on the average considerably smaller, lighter in weight, differently granulated, with paler (less green and brown) and finer markings,—the largest eggs of S. *senegalensis*, however, being equal to the smallest ones of the two species mentioned. Small eggs of our species are equal in size to, or even surpassed by the large ones of S. *hybrida*; but these, collected in N.W. Africa, Hungary, and S. Russia, exhibit the granulations more flattened, the ground-colour much more intense, and the markings considerably darker and frequently more crowded.



M & N Hanhart imp.

FIG. 1. EGGS OF STERNA AFFINIS.

„ 2. „ STERNA VELOX

The Arabian fishermen stated that the old birds cover the young ones immediately after their being hatched.

5. Sterna affinis, Rüpp. (Plate V. figs. 1, 2, 3.)

This species and the following agree with the former in locality, season, and other specialities of breeding,—being, however, much less frequent. They also breed in companies on the shore, but separately from each other and from *S. senegalensis*.

The average dimensions of eight eggs, collected near Amarat and on the island of Lobo (Archipelago of Dahalak), are 23 lines by 16. The weight of the shell varies between 36 and 44 grains. There are two principal varieties with respect to coloration :—(*A*) white or greenish-white with coarse spots, sometimes scattered, sometimes arranged in groups. The centre of each spot is violet-grey or blackish-grey, which colour passes into a beautiful chestnut-brown and dark-brown towards the periphery; the edges are generally burnt-brown. These eggs resemble those of *Cepphus grylle*. (*B*) yellowish, sometimes with a reddish shade, dotted and striolated; the darkest points, dots, and streaks are black-brown or brownish-red; the margins of the spots shining brown or red. In one specimen bluish-grey spots form a zone round the base with many flourishes. All the eggs, held against a flame, are transparent yellowish-green.

Some of the eggs much resemble those of *Sterna cantiaca*; but they are all distinguished by the more variegated coloration, the smaller size, and the different structure, characterized by shallow, serrated pores, and by finely granulated rounded tubercles, which render some parts of the shell rather rough.

6. Sterna velox, Rüpp. (Plate V. figs. 4, 5, 6, 7, 8.)*

Of this species, which has the same peculiarities of breeding as the preceding two, I have fourteen eggs in a good state of preservation and five injured ones, collected on the island of Lobo, the 1st of August, 1857. They are distinguished from all the eggs of *Sterna* hitherto known, by their considerable size and their beautiful and very variegated coloration. Their length reaches 25–29, their breadth 17½–18½ lines; their weight amounts to 54–70, generally to 60 grains. The ground-colour is greenish-white, greenish-grey, reddish-white, incarnate, or violet-rose. The greenish specimens have, as in *Alca torda*, large blackish-brown burnt spots and grey clouds; the reddish ones mostly smaller, rounded, sometimes also burnt spots, the colour changing from the centre to the margin as stated above, and frequently short and numerous flourishes of a chestnut-brown (rarely entirely black or light-brown) nearly red colour. In several specimens the flourishes are as large and as well-developed as in the finest eggs of *Uria troile*. Bluish-grey markings lie deeper in the substance of the shell, and sometimes little conspicuous in the whitish specimens; they generally correspond to the external spots in size, form, and situation, and appear rarely as larger clouds in dotted eggs. One specimen is uniform greenish-white. Reddish eggs, held against a light, are transparent yellowish-green, greenish ones bluish-green. The granulation is strong, coarse, flat, labyrinthine, with rounded pores and deep pits.

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* This is the "Swift Tern" of British Lists, a specimen of it having been once killed in Ireland, as mentioned in Thompson's 'Birds of Ireland.'—Ed.

7. ANOUS TENUIROSTRIS, Leach. (*Sterna senex*, Cranch.)

This species, observed by Rüppell in the Red Sea, and by others in West Africa, was found by Heuglin in about 11° N.L., on the Somali (Somauli) coast, on Bur-da-Rebschi (Arab. Djebel-Tiur), a rocky and very steep island, about 500 feet high. There thousands of them breed, the most efficient producers of the guano collected by the Somali fishermen, who state that their breeding-season is in May or June.

Heuglin found (14th Nov. 1857) some old eggs (which admitted of an imperfect preservation only, and some of which were discoloured by the light-brown adherent guano) on the surface and on the clefts of the rocks. Eight specimens were procured, of an elongate-ovate form, having a length of 21 to 24 lines, and a breadth of 14 to 16 lines. On the average they are 23 lines long and 15 broad; the longest is the broadest. They are closely allied to the eggs of *Anous stolidus* with regard to size and coloration. They have a pale reddish-yellow, flesh-coloured or whitish ground-colour, and either only a few spots of rather large size and of a pale violet-grey or brownish-grey colour, with some light-brown points besides; or the markings more distinct and numerous, grey and reddish-brown, sometimes shining dark-brown with lighter edges, or reddish-grey and reddish-brown, densely dotted on the obtuse end. As in most of the *Laridæ*, the spots are rounded and laterally produced. The shell, held against a light, is transparent yellow; its weight is about 35 grains. Their granulation is flat, somewhat resembling that of *Rhynchops*.

8. LARUS HEMPRICHII, Bp.

This bird breeds on the Amarat Islands, at a greater distance from the shore than *Sterna senegalensis*, in companies of six to ten pairs. Such a small colony was found by Heuglin on a plain of sand surrounding a hill and covered with salt-plants and bushes. The greater part of the young ones were hatched on the 27th of July, 1857. Three nests only, two with two eggs, and the third with one, all hard-set, remained. They lay in the sand beneath some bushes. The eggs, which are from 23 to 24½ lines long and 16 to 17½ lines broad, equal in size those of *Larus tridactylus*, the smallest eggs of *Larus canus*, and the largest ones of *Larus ridibundus*. The pale greyish-yellow, rarely brownish-yellow, sometimes greenish-grey ground-colour is speckled, dotted, and striolated with grey and pale-brown. They are moderately shining, and have a weight of 46 to 48 grains or more. The granulation is somewhat stronger than in *Larus ridibundus*, but not so strong as in *Larus canus*, and less uniform than in *Larus tridactus*.

The old birds endeavoured to lead away the attention of visitors from their offspring. The young birds have whitish down; they are hidden in the thick thorn-bushes immediately after their being hatched, and afterwards, before they are able to fly, brought into shallow water.

9. LARUS LEUCOPHTHALMUS, Licht.

When Heuglin examined the island of Perim (which has lately become of so great political importance), he found a high rocky part of it almost exclusively occupied by *Larus leucophthalmus*, which had selected that spot for breeding (17th

Sept. 1857). Two eggs containing mature embryons, which cannot be referred to any other species, were found under a bush. One of the specimens, procured for my collection, shows that the eggs are as closely allied to those of the preceding species as the birds themselves are to each other. It is 24 lines long and 12 lines broad; it has a darker and browner ground-colour, the grey and brown markings, and, besides, it is lineolated with blackish on the broad extremity. The grain equals that of the eggs of *Larus hemprichii,* but appears to be rather more strongly developed.

XIV.—*Additions and Corrections to the "Ornithology of Amoy."*

By Robert Swinhoe, of H.M. Consular Service.

Mr. G. Schlegel of Amoy (son of the renowned Dr. Schlegel of the Leyden Museum) having kindly lent me a copy of the 'Fauna Japonica,' I am enabled to make the following additions and corrections to my article on the "Ornithology of Amoy," published in the last number of 'The Ibis.'

Caprimulgi, sp. 13 and 14.

The first of these, I find, is akin to *C. jotaka* of the 'Fauna Japonica.' The most striking points of difference are as follows:—In three individuals of our species the wing is half an inch and the beak 2 lines longer. Instead of the second, third, and fourth quills in the male having a white band, ours has a white spot on the inner web of the first and a band across the second and third primaries only. The sides of the head, the greater and lesser wing-coverts, and the scapulars are fronted with white; and a narrow line of pure white runs from the bill to the top of the eye and extends in a broken manner beyond; but in most other respects our bird resembles *C. jotaka,*—the tail being banded with white, pretty much in the same style, and the tarsus feathered down to the base of the toes. I have named it for the present *C. dytiscivorus,* from its habit of feeding on *Dytiscidæ,* to which family belong several large insects taken out of the stomach of specimens which I have shot.

These beetles had in every case their long hind legs reversed, and were quite dead.

CISTICOLA TINTINNABULANS, sp. 29.

I have compared this species with *C. brunneiceps* of the 'Fauna Japonica,' and note the following differences:—Ours is half an inch longer in whole length, and five lines shorter in the wing. The first quill is very short, instead of being nearly equal to the second. The latter is 1½ lines shorter than the third, fourth, and fifth, which are equal and longest. The bill, too, is longer. The feathers of the head are bordered with yellowish-brown. No greyish-brown occurs on the breast; but the medial line from the throat to the vent is pure white, more or less margined with sienna-buff on both sides.

ARUNDINAX CANTURIANS, sp. 32.

I have compared this with the descriptions of *Salicaria cantans* and *S. cantillans* given in the 'Fauna Japonica;' and though closely allied to the former, it certainly is not the same. The *S. cantans* seems to bear to the *S. cantillans* the same analogy that this species bears to *Arundinax minutus*.

NEMURA RUFILATA, sp. 43.

This is evidently the bird described in the 'Fauna Japonica' under the term *Lusciola cyanura* (Pallas), and there stated to be found in Siberia and Japan.

PARUS MINOR, sp. 45.

This species is certainly that of the 'Fauna Japonica.' It prevails along the coast of China, from Hong-Kong to Shanghai. *Parus trivirgatus* is common at Shanghai, but is not met with so far south as this.

ZOSTEROPS JAPONICUS, sp. 46.

This answers in every respect to the bird described in the 'Fauna Japonica,' except that the first quill, though very minute, is yet not *wanting*. The bill and legs are of a slaty-blue when the bird is alive, and not of a *blackish-brown horn-colour* (an error evidently attributable to the description being taken from a dried skin). The breast and flanks are of a pale dingy colour, with but very little reddish. This may, however, vary in more northerly specimens. The iris is of a *dark blackish-brown.*

TURDUS CHRYSOLAUS, sp. 57.

After this bird should be inserted, as one of the unrecognized species of Thrush, *Turdus cardis* of the 'Fauna Japonica.' This small but handsome bird, so remarkable for the changes which it undergoes, from the plumage of a true *Turdus* to that of a *Merula,* seeming to form a link between the two subgenera, visits us chiefly during winter and at the commencement of the spring. It appears to vary a good deal in size.

LANIUS BUCEPHALUS, sp. 77.

The bird mentioned as the only one met with is evidently a female, answering in every respect to the description of that sex in the 'Fauna Japonica.'

ALAUDA CŒLIVOX, sp. 98.

This bird differs from the *A. japonica* of the 'Fauna Japonica' in being much smaller. The largest specimen that I have is one inch shorter, though the wing is of the same length. The inner toe is 1½ lines longer than the outer, instead of being shorter; and the beak is longer.

Our bird is a southern species in China, not being found so far north even as Shanghai. If, then, *A. japonica* differs from *A. malabarica,* our *A. cœlivox,* I should say, undoubtedly differs from both.

ARDETTA SINENSIS, sp. 119.

After this should be added as a species *Butorides javanica* (Horsf.), a few of which spend the summer in this neighbourhood.

TOTANUS PULVERULENTUS, Müll. & Schleg.

A specimen of this bird is in the collection of Mr. G. Schlegel of Amoy; and it should therefore be added to the list after *Totanus ochropus* (sp. 125).

GALLINAGO SOLITARIA ?, sp. 133.

This is certainly not the species described as *Scolopax solitaria* in the 'Fauna Japonica.' In September last I procured another large species of Snipe nearly akin to *G. major* of Europe, but having *eighteen* instead of *sixteen* feathers in the tail.

Larus melanurus, Temm. & Schleg.

This Gull, described in the 'Fauna Japonica,' is by no means uncommon here during winter, and should be inserted in the list.

XV.—*Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro.* By the Hon. Thomas L. Powys, F.Z.S. Part II.

[Continued from page 10.]

26. Barn Owl. (*Strix flammea.*)

Common in the island of Corfu, where it breeds in the old fortifications about the town. I never saw or heard of this species on the mainland.

27. Tengmalm's Owl. (*Nyctale tengmalmi.*)

I saw a skin of this Owl at Corfu, which I was assured had been shot in the island.

28. Long-eared Owl. (*Otus vulgaris.*)

Common in Corfu, haunting the thick coverts of *Arbutus* about Strangili, Govino, and Misonghi. I did not often observe this species on the mainland; I shot one, and saw four or five more on Mavronoros, a mountain near Livitazza in Epirus.

29. Eagle Owl. (*Bubo maximus.*)

I very often heard, and occasionally saw, birds of this species in Epirus and Albania proper, in which provinces it is common, and breeds. One of our party killed a fine specimen near Prevesa, on the Gulf of Arta, in March 1857. I shot a female near Butrinto in February 1858, and was in at the death of another near Santa Quaranta shortly afterwards. I was watching a pair of Bonelli's Eagles one day near Butrinto, when an Eagle Owl came flying past me in a much more hurried manner than is its wont, and took refuge in a thorn-bush, about a gun-shot from where I stood. He had hardly reached this shelter before a Peregrine Falcon stooped at him, and, just missing him, rose, and "made her point." I drove the Owl out, and I was witness of a beautiful flight across an open plain of considerable extent; the Falcon making repeated feints, the Owl flying low, and dodging round the scanty thorn-bushes, till he at length reached a hill-side thickly covered with wild olives, amongst which he plunged, and set his pursuer at defiance. The Albanian and Greek specimens of this Owl which I have examined struck me as much lighter-coloured and rather smaller than those from Spain, Sicily, France, Germany, and Norway.

30. Short-eared Owl. (*Otus brachyotus.*)

I saw two of this species near Prevesa in March 1857; and two or three were brought into the Corfu market in the latter part of the same month. I killed one at Butrinto in February 1858. The Corfu bird-stuffer told me that this Owl occasionally visits the island in March in great numbers.

31. Little Owl. (*Athene noctua.*)

I believe this species to be a summer visitor to Epirus. We found it nesting in the ruins of Nicopolis in March 1857, and at Santa Quaranta in May. It is rare in Corfu.

32. Scops Eared Owl. (*Scops zorca.*)

Very common in Corfu during the summer months, arriving about the beginning of April, and breeding in the old olive-groves, which, from that time till the middle of October, resound with their melancholy and monotonous cry. The favourite food of a Scops Owl which I kept alive at Corfu for some months was the Humming-bird Moth, which abounds in the island in August and September. I observed one of this species in the island as late as the 17th November, 1857. I was gravely assured by a Spanish lady that this species and the Barn Owl enter the chapels and churches in Andalusia to drink the oil in the lamps which are kept burning in the shrines of the saints, and that it behoved all good Christians to slay them whenever they found them, adding, "Son las gallinas del demonio, Señor."

33. Ash-coloured Shrike. (*Lanius excubitor.*)

I observed this bird once in Montenegro, in August 1857.

34. GREAT SOUTHERN SHRIKE. (*Lanius meridionalis.*)

I shot a specimen of this bird in the island of Corfu on the 29th April, 1857. It is far from common in these parts. The Corfu bird-stuffer assured me that my bird was the only one he had ever seen.

35. ROSE-BREASTED SHRIKE. (*Lanius minor.*)

A rare summer visitor to the island of Corfu, where I obtained three specimens in May 1858. Abundant in Montenegro in August.

36. RED-BACKED SHRIKE. (*Enneoctonus collurio.*)

Arrives in Corfu in small numbers in April, and remains to breed.

37. WOOD SHRIKE. (*Enneoctonus rufus.*)

Very abundant in all the islands in the summer months, arriving about the end of April, and breeding in the olive-groves.

38. RAVEN. (*Corvus corax.*)

Very common in Corfu and Epirus. A pair breed every year in the citadel rock of Corfu, and are annually robbed of their young by the soldiers. I observed small flocks of Ravens in September, haunting the Bay of Corfu, and particularly the island of Vido. I saw a Raven near Scutari, the capital of Albania proper, with white wings.

39. HOODED CROW. (*Corvus cornix.*)

An occasional winter visitor in Epirus, where I observed it near Prevesa, in March 1857. Common on the coasts of Albania proper in December; abundant in Montenegro in August. Apparently quite unknown in Corfu.

40. ROOK. (*Corvus frugilegus.*)

Arrives in Corfu and Epirus in immense numbers about the end of October, and disappears about the beginning of February.

41. JACKDAW. (*Corvus monedula.*)

Common in summer; in Epirus I have occasionally seen a single individual during the winter months.

42. MAGPIE. (*Pica melanoleuca.*)

Very common, and resident in Epirus and Corfu.

43. COMMON JAY. (*Garrulus glandarius.*)

Abundant, and breeds in Epirus and Corfu. I never could discover *Garrulus melanocephalus* in these parts, though I fancied that I sometimes saw, in the thorn coverts of Butrinto, a Jay larger than the common species. I found a Jay's nest built in a ruined fort near Butrinto,—a very unusual locality, I fancy, for this peculiarly thicket-loving species.

44. ALPINE CHOUGH. (*Pyrrhocorax alpinus.*)

I only once observed a pair of this species in Epirus; this was in May 1857, when I was chamois-hunting in the Acroceraunian Mountains, above Khimàra, about forty miles north of Corfu. I have since had many opportunities of observing closely the habits of this very graceful bird, in the mountains of Nice and Piedmont. Often, when I have been crouched behind a rock waiting for a shot at chamois, they would settle on a point of rock or ice within a few yards of me, and hop fearlessly about, occasionally whistling and chattering, as if to inquire of each other what possible business brought me up to their haunts. I was on one occasion surrounded by a party of about a dozen of this species, which kept up an incessant noise for about half an hour, when one of them suddenly turned his head towards the sky, uttered a very peculiar croak, and the whole party immediately crouched close down on the rocks and snow. I looked up, and a Golden Eagle came whizzing past me with wings nearly closed, in pursuit, I think, of a Marmot: the Choughs immediately sneaked off, and paid me no more visits that day. I have seen a pair of these birds go through a sort of game of catchball with a small pebble, tossing it up from one to the other, and catching it in their bills. I have been informed on good authority that the Cornish Chough (*Fregilus graculus*) is not rare on Parnassus and the Pindus range, but I have never seen it in Turkey or Greece.

45. COMMON STARLING. (*Sturnus vulgaris.*)

This species visits Corfu and Epirus in October, and remains till about the middle of March. I observed immense flocks of Starlings near Port Platea in Acarnania in January 1858.

46. SARDINIAN STARLING. (*Sturnus unicolor.*)
I shot one of this species in Corfu in May 1857. This was the only instance in which I observed it in these parts.

47. ROSE-COLOURED PASTOR. (*Pastor roseus.*)
These beautiful birds arrive at Corfu, occasionally in great numbers, early in June, and haunt the orchards, feeding almost entirely on mulberries. In 1857 very few visited the island, and I only obtained one specimen; but in June 1858, the mulberry gardens were full of them for some days, and I obtained specimens in abundance and in all their different states of plumage. As far as my own observation goes, they are not easily approached, and have the same habit as the Golden Oriole of remaining motionless amongst the thick foliage, allowing the tree in which they are concealed to be shaken, or beaten, without stirring. These birds remain only a few days on the island, and are well known to the Corfiote peasantry by the name of "Mulberry-eaters," *σκαμνοφάγοι*.

48. COMMON HOUSE SPARROW. (*Passer domesticus.*)
Resident, but not very abundant in Corfu and Epirus.

49. TREE SPARROW. (*Passer montanus.*)
I once observed a pair of this species near Ptelia in January 1857.

50. HAWFINCH. (*Coccothraustes vulgaris.*)
Common in winter in the thorn-coverts of Epirus. I have observed old nests in that country which I am pretty sure belonged to this bird, though I never saw it or heard of its occurrence there during the summer months.

51. CHAFFINCH. (*Fringilla cœlebs.*)
Common in winter in Corfu and Epirus, arriving in October and disappearing in February or March. The sexes appear to keep apart, and the females are by far the most numerous.

52. ROCK SPARROW. (*Petronia stulta.*)
I observed several of these birds in the Acroceraunian mountains in May 1857, and in Montenegro in August of the same year.

53. Greenfinch. (*Coccothraustes chloris.*)
Resident and very common in Corfu and Epirus.

54. Siskin. (*Chrysomitris spinus.*)
Very abundant in Epirus in winter.

55. Citron finch. (*Fringilla citrinella.*)
Common in Corfu and Epirus in summer. I cannot positively state whether it leaves the island in winter, but it is certainly less numerous than during the summer.

56. Common Linnet. (*Linota cannabina.*)
Very common, and resident in Corfu and Epirus.

57. Goldfinch. (*Carduelis elegans.*)
Common, and breeds in Corfu. I have not noticed it on the mainland, except in winter; it is then very common.

58. Bullfinch. (*Pyrrhula vulgaris.*)
A rare winter visitor to Corfu and Epirus. Common in December in Albania Proper, about the mouth of the River Drin, where I observed it feeding on the berries of the Privet.

59. Common Crossbill. (*Loxia curvirostra.*)
I saw a pair of this species in a cage at Corfu, which I was assured had been brought from the pine-forests of the Black Mountain in Cephalonia. It is decidedly a rare bird in Corfu, though the bird-stuffer assured me he had occasionally seen it.

60. Cirl Bunting. (*Emberiza cirlus.*)
Resident, but not very abundant, in Corfu.

61. Ortolan Bunting. (*Emberiza hortulana.*)
This Bunting arrives in Corfu in April, and remains to breed. It is rather common. I never observed it in winter.

62. Foolish Bunting. (*Emberiza cia.*)
I noticed this species only once in these parts. This was a single bird, seen near Pagania in January 1857.

63. Common Bunting. (*Emberiza miliaria.*)
Occurs sparingly in Corfu and Epirus in winter.

64. Reed Bunting. (*Emberiza schœniclus.*)
Common in Epirus in winter, but less so than the next species.

65. Marsh Bunting. (*Emberiza palustris.*)
Common in Corfu and Epirus in winter. A few remain to breed on the island.

66. Black-headed Bunting. (*Emberiza melanocephala.*)
Arrives in Corfu and Epirus in great numbers in April, and remains to breed, disappearing in September; has an agreeable song. This bird is known in Corfu by the name of "Ortolano."

67. Missel Thrush. (*Turdus viscivorus.*)
Not very common in Corfu and Epirus in the winter; more so in continental Greece.

68. Fieldfare. (*Turdus pilaris.*)
I, on one occasion only, observed this species in these parts; this was near Kataito in Epirus, on the 23rd February, 1858.

69. Song Thrush. (*Turdus musicus.*)
Very common in winter in Corfu, Epirus, and Acarnania, arriving in October and disappearing in April; a few, I think, occasionally remain to breed in Epirus.

70. Redwing. (*Turdus iliacus.*)
I have observed this bird occasionally in Epirus during the winter months.

71. Ring Ousel. (*Turdus torquatus.*)
I saw one of this species near Scutari, in Albania, about the middle of August 1857.

72. Blackbird. (*Turdus merula.*)
Abounds in Corfu, Epirus, and Albania, in winter. I imagine, as in the case of the Song Thrush, that a few pairs breed in Epirus.

73. Blue Rock Thrush. (*Monticola cyaneus.*)
Resident, and very abundant in Corfu and Epirus, as in all parts of the Mediterranean shores which I have visited. A bird of this species, which I bought at Palermo, immediately attacked and devoured a Willow Wren which came on board our yacht in a gale off the south coast of Sicily in November 1856.

74. Common Rock Thrush. (*Monticola saxatilis.*)
Common in May 1857, among the Acroceraunian moun-

tains, where I found the nests of this species, among *débris* carried down by the melting of the snows, on Ischika, one of the highest points of that range. I have once or twice observed the Rock Thrush in the Island of Corfu, where it is highly prized as a singing bird.

75. COMMON WHEATEAR. (*Saxicola œnanthe.*)

Arrives in Epirus in March; common during the summer months.

76. RUSSET WHEATEAR. (*Saxicola stapazina.*)

More abundant than the preceding species in Epirus during the summer.

77. EARED WHEATEAR. (*Saxicola aurita.*)

This is the least common of the three species of Wheatear that I have observed in these parts. It arrives at the same time as the preceding.

78. WHINCHAT. (*Pratincola rubetra.*)

79. STONE-CHAT. (*Pratincola rubicola.*)

Both these species are common in summer, and I have occasionally observed the latter in winter, in Corfu and Epirus.

80. ALPINE ACCENTOR. (*Accentor alpinus.*)

Common in the Acroceraunian mountains in May 1857.

[To be continued.]

XVI.—*The Ornithology of Northern Celebes.*

By ALFRED RUSSEL WALLACE *.

I HAVE just returned from a three months' exploration of Menado and the surrounding district of Minahassa, forming the north-eastern extremity of Celebes. My collection of birds is not a very extensive one, but it comprises some very interesting species, and I have made some observations on habits and economy which I think will be interesting to your readers.

I first visited the most elevated district, taking up my residence in a village at an elevation of 3500 feet. The weather, however, was very unpropitious, and birds very scarce. The most interesting species was the beautiful *Enodes erythrophrys*, Temm., which, as far as I could ascertain, is confined to the interior mountain districts, and never abundant. The anomalous *Scissirostrum pagii*, Lafr., however, so scarce at Macassar, was here plentiful, occurring in flocks about the hill-plantations, often settling on dead trees, in the holes of which it builds, and keeping up a loud and almost continual chirping. It, in fact, takes the place of *Lamprotornis*,and is called by the same native name. The beautiful large Wood Swallow, *Artamus monachus*, Temm., was seen here; but I left the place without obtaining a specimen, and never met with it again, *A. leucorhynchus* being the common species of the country. A pretty *Zosterops* and two or three *Ralli* were almost the only other birds I obtained at this elevation.

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* Commuuicated in a letter from Mr. Wallace to the Editor.

I then removed to a forest district beyond the lake of Tondano, at an elevation of about 1500 feet, and, had the circumstances been favourable, I think I should have obtained a fine collection. But the weather was worse than before, the sun being often invisible for eight or ten days together, and both my hunters were sick and left me, so that it was almost impossible for me to do anything. Of the few species I obtained, however, several were new to me; viz. *Ptilonopus gularis*, Q. and G., the noble *Carpophaga forsteni*, Temm., a most lovely *Cinnyris* with scarlet breast and yellow-striped throat (I hope a new species), and a rather pretty little *Parus* (?). A second species of Racket-tailed Parrot also occurred here, I suppose the *Prioniturus discurus*, Vieill., very distinct in both sexes from the *P. platurus*, which was found at Macassar as well as here, though more sparingly than the former. It is a most interesting bird, but in a dozen or twenty specimens I found only one or two with the tail-feathers finely developed. These birds attack the Bananas near the villages, and fly with much screaming after dark, even as late as nine or ten o'clock.

Returning to Menado, I collected in that neighbourhood and on to the eastern extremity of the peninsula. The fine Goat-sucker, *Lyncornis macropterus*, Temm., is abundant about the town of Menado, appearing soon after sunset, chasing insects with rapid evolutions. I now obtained some Kingfishers which seem almost wanting in the mountain districts. *Halcyon melanorhyncha,* Temm., is found near the beech and on rivers; *H. monachus,* Forsten, in the forest, being in its insect food allied to the *Dacelones.* The beautiful *Dacelo cyanotis,* Temm., occurred only in the central virgin forests. *Pitta celebensis,* Forst., was scarce; and I was disappointed in not obtaining either of the other two species found by Forsten. Many other species also escaped me, especially the *Meropogon forsteni,* Temm., which I had set my heart upon obtaining, but of which I saw no trace. The beautiful Ground Pigeon, *Chalcophaps stephani,* Reich., though not rare, was very difficult to get; and of the fine *Phlegœnas tristigmata* I procured only a single specimen. The birds which possessed the highest interest for me were, however, the two *Megapodii,* about which I have some interesting facts to communicate.

One of these is a true *Megapodius,* of small size, and only remarkable for not making a mound of refuse, like most of the genus, but, instead of this, scratching out a hole in the rotten stump or root of a fallen tree, and there burying its eggs. The species is, I suppose, known, though you do not mention it among those noticed in your paper* on the Fauna of New Guinea. The other is the noble *Megacephalon maleo,* one of the finest of the *Megapodiidæ,* remarkable for the backward prolongation of the cranium into a cellular mass, the short, blunt claws, and the delicate rosy hue of the under side of the body.

This interesting bird is confined, so far as I am aware, to the northern peninsula of Celebes, and to the littoral portions of the island, never being found in the mountain ranges or in the elevated district of Tondano. It seems particularly to abound in the forests around the base of the Klabat mountain, feeding entirely on fallen fruits, which in the crop resemble the cotyledons of leguminous seeds. In the months of August and September, when there is little or no rain, they descend to the sea-beach to deposit their eggs. They choose for this purpose certain bays remote from human habitations. One of these serves for an extensive tract of country, and to it the birds repair daily by scores and hundreds. I visited the most celebrated of these beaches, but, it being late in the season, did not see so much of the birds as I might otherwise have done. I made, however, some interesting observations, and obtained a very fine series of specimens during my stay of six days.

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* Journ. Proc. Linn. Soc. Zool. ii. p. 149.

The place is situated in the bay between the island of Limbe and Banca, and consists of a steep beach about a mile in length, of very deep, loose, and coarse black volcanic sand, or rather gravel, exceedingly fatiguing to walk over. It is bounded at each extremity by a small river with hilly ground beyond, while the forest behind the beach itself is somewhat flat and its growth stunted, so that it has quite the appearance of being formed from the *débris* of an ancient lava-stream from the Klabat volcano, especially as beyond the two rivers the beaches are of *white* sand. In the mass of loose sand thrown up above high-water mark are seen numbers of holes four or five feet in diameter. In and around these holes, at a depth of one or two feet, the eggs of the Maleos are found. There are sometimes only one or two, sometimes as many as seven or eight in one hole, but placed each at a distance of 6–8 inches from the others, and each egg laid by a separate bird. They come down to the beach, a distance often of ten or fifteen miles, in pairs, and, choosing either a fresh place or an old hole, scratch alternately, throwing up a complete fountain of sand during the operation, which I had the pleasure of observing several times. When a sufficient depth is reached, the female deposits an egg and covers it up with sand, after which the pair return to the forest. At the end of thirteen days (the natives assert) the same pair return, and another egg is deposited. This statement seems to have been handed down by tradition, having perhaps originated from the observation of some wounded or singularly marked bird. I am inclined to think it is near the truth, because in the females I killed before they had laid, the egg completely filled up the lower cavity of the body, squeezing the intestines so that it seemed impossible for anything to pass through them, while the ovary contained eight or ten eggs about the size of small peas, which must evidently have required somewhere about the time named for their successive development. The colour of the eggs is a pale brownish-red, and their dimensions are

4·3 inches long by 2·4 inches wide. When quite fresh they are delicious eating, as delicate as a fowl's egg, but much richer, and the natives come for more than fifty miles round to search for them. After the eggs are once deposited in the sand the parent birds pay no further attention to them. The young birds on breaking the shell work their way up through the sand and run off to the forest.

The appearance of the birds when walking on the beach is very handsome. The glossy black and rosy white of the plumage, the helmeted head and the elevated tail, roofed like that of the common hen, form a *tout ensemble* quite unique, which their stately and somewhat sedate walk renders still more remarkable. When approached they run pretty quickly, and, if suddenly disturbed, take flight to the lower branches of some adjacent tree. There is hardly any difference between the sexes, except that in the male the cranial protuberance and nasal tubercles are a little larger, and the rosy or salmon tinge of the breast and belly a little deeper; but these characters are not so constant and conspicuous as to make it always possible to distinguish the male from the female bird.

When we consider the great distances the birds come and the trouble they take to place the eggs in a proper situation, it does seem extraordinary that they should take no further care about them. It is, however, quite certain that they neither do nor can watch over them. The eggs deposited by a number of hens in succession in the same hole must render it impossible for each to distinguish its own, and the food of the parent birds can be obtained only by continual roaming, so that if the numbers which come down to this beach alone in the breeding season (according to the accounts, many hundreds or even thousands) were obliged to remain in the vicinity, the greater part would perish of hunger.

In the structure of the feet of the *Megacephalon* we may see a reason why it departs from the habits of its nearest allies, the *Megapodii* and *Talegalli*, which generally heap up mounds of earth and rubbish in which to bury their eggs. The feet of the Maleos are not nearly so strong in proportion as those of the former birds, while the claws are short and straight, instead of being very long and greatly curved. The toes are, however, slightly webbed at the base, and thus the whole foot and rather long leg are well adapted to scratch away rapidly a loose sand, although they could not, without much labour, accumulate the heaps of miscellaneous materials which the large, grasping feet of the *Megapodii* bring together.

The very peculiar habits of the whole family of the *Megapodiidæ* departing widely from those of all other birds, may also, I think, be shown to be almost the necessary results of certain peculiarities of organization. These peculiarities are two—the size and number of the eggs, and the nature of the food on which these birds subsist. Each egg being so large as to fill up the abdominal cavity and with difficulty pass the walls of the pelvis, a considerable interval must elapse before the succeeding ones can be matured. The number of eggs which a bird produces each season seems to be about eight, so that an interval of *three months* elapses between the laying of the first and last egg. Now, supposing the eggs to be hatched in the ordinary way, they must be laid on the ground (for the general structure of the bird renders the construction of an arboreal nest impossible) and must be incessantly watched by the parents during that long interval, or they would be surely destroyed by the large lizards which abound in the same district. It seems probable, however, that the eggs could not retain the vital principle for so long a time, so that the bird would have to sit on them from the commencement, and hatch them successively. But the period of incubation is a severe tax upon all birds even when it is comparatively short and food easily obtained. In this case complete incubation would be most likely impossible, because the particular species of fruits on which these birds subsist would be soon exhausted around any one locality, and both parents and offspring would perish of hunger. If this view is correct, the *Megapodiidæ* *must* behave as they do. They must quit their eggs to obtain their own subsistence,—they must bury them to preserve them from wild animals,—and each species does this in the manner which slighter modifications of structure render most convenient.

It has been generally the custom of writers on natural history to take the habits and instincts of animals as the fixed point, and to consider their structure and organization as specially adapted to be in accordance with them. But this seems quite an arbitrary assumption, and has the bad effect of stifling inquiry into those peculiarities which are generally classed as "instincts" and considered as incomprehensible, but which a little consideration of the *structure* of the species in question, and the peculiar physical *conditions* by which it is surrounded, would show to be the inevitable and logical result of such structure and conditions. I am decidedly of opinion that in very many instances we can trace such a necessary connexion, especially among birds, and often with more complete success than in the case which I have here attempted to explain. For a perfect solution of the problem we must, however, have recourse to Mr. Darwin's principle of "natural selection," and need not then despair of arriving at a complete and true "theory of instinct." This subject is, however, far too large to be discussed here; and with a few words on the general character of the Ornithological Fauna of Celebes I must conclude.

I am now acquainted with 140 birds of Celebes, and there are ten found by Forsten which I have not met with. This number of 150 species is very small, considering the extent of the island, yet I do not think that future researches will very materially increase it. Many of the chief families which swell the list of species of the western islands are here either altogether absent or very feebly represented. The vast group of the *Turdidæ* is almost absent, the *Bucconidæ, Trogonidæ,* and *Eurylæmidæ* quite so. The *Picidæ* too have almost disappeared, while even the *Laniidæ* and *Muscicapidæ* furnish us with only two or three species. There are indeed a number of very peculiar genera and species, but no extensive groups to make up for the deficiencies which I have noticed. The characteristic groups of the Moluccas and New Guinea on the other side are also for the most part wanting. The fine group of true Lories is not found here, though these birds occur in the little island of Siao, a few miles to the north, from whence I obtained the lovely *Eos indicus,* Gm. Neither do the genera *Eclectus, Geoffroius, Rhipidura, Tanysiptera,* or *Tropidorhynchus* ever occur.

A very large proportion of the species of Celebes are altogether peculiar to it. Only eight land-birds are common to it and the Moluccas, viz. *Merops ornatus, Munia molucca, Eurystomus pacificus, Ptilonopus superbus, Turtur chinensis, Hirundo javanica, Todiramphus collaris,* and *Scythrops novæ hollandiæ*; and most of these are birds of a very wide range in the Archipelago, only one in fact, the *Ptilonopus,* being a strictly Moluccan bird, and that differs almost enough to be considered distinct. The birds of Java, Borneo, and Timor are, on the other hand, better represented, as might be expected, from those islands entirely surrounding the southern and western parts of Celebes; yet not more than twenty species of these occur, leaving about 100 land-species altogether peculiar to this island. Such a disproportion probably occurs nowhere else in the world, even in islands less favourably situated for receiving immigrants.

On the whole, therefore, though disappointed as to the number and variety of species, I cannot but consider the island of Celebes to be one of the most interesting in the world to the philosophical ornithologist, and well worth the time I have bestowed upon it. The Dutch naturalist Forsten having resided a year and a half at Menado with unlimited means and Government assistance, I cannot hope to have made many discoveries; I trust, however, that one or two of the smaller species may prove new.

Amboyna, Oct. 1859.

XVII.—*On an undescribed Species of Hawk from New Granada.*

By Philip Lutley Sclater.

(Plate VI.)

Although the *Accipitres* generally are birds of wide distribution, instances of species being confined to narrow geographical limits are not wanting even in this group. The mountain-valleys of New Granada—so fertile in zoological novelties of every sort—have produced several birds of prey which are not known to occur elsewhere. The curious *Milvago caruncultatus**, described from a single specimen, now, we believe, in the Museum of the Academy of Natural Sciences of Philadelphia, is from this country, and the beautiful *Accipiter castanilius* of Prince Bonaparte* comes from the maritime portion of the same Republic. The bird we are now about to describe is a close ally of the latter species. It is an inhabitant of the interior of New Granada, an adult example in the gallery of the British Museum having been received with other birds from Bogota in 1854. Dr. Kaup of Darmstadt, who has devoted much attention to the Birds of Prey, attached to this specimen some years ago the MS. title '*Micronisus collaris,*' but never published a description of it. I adopt Dr. Kaup's specific term but prefer to place the bird in the genus *Accipiter,* to which it appears quite sufficiently related. The front figure (Plate VI.) is taken from the typical example. The younger bird in the background is drawn from a specimen in Mr. J. H. Gurney's collection, selected out of a large series of Bogotan birds in 1859, and kindly submitted to my examination. To the same gentleman's liberality I am indebted for the plate illustrating this species, from the pencil of Mr. Wolf. It may be characterized as follows:—

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* *Phalcobænus caronculatus,* Des Murs, Rev. Zool. 1853, p. 154.

ACCIPITER COLLARIS. (Plate VI.)

Micronisus collaris, Kaup, in Mus. Brit.

Supra fusco-niger: subtus albus, vittis latis fusco-nigris regulariter transfasciatus: gula immaculate alba: cauda fasciis quinque, subtus albis supra cinereis apparentibus: rostro nigro, cera et pedibus flavis, unguibus nigris. Long. tota 10·5, alæ 6·75, caudæ 5·0, tarsi 2·0.

Hab. in Nova Granada interiore.

Mus. Brit. et Joh. Henr. Gurney.

An irregular white collar at the back of the head shows itself on disturbing the feathers. The wings underneath are white, distinctly and broadly banded with black. The tail-bands are nearly obsolete on each outer rectrix. The wings reach to about two inches from the end of the tail: the third primary is longest, the second equals the fourth, and the first is slightly longer than the fifth.

There is no American species of *Accipiter* that this can easily be confounded with, but it somewhat resembles *A. minullus* of Southern Africa.

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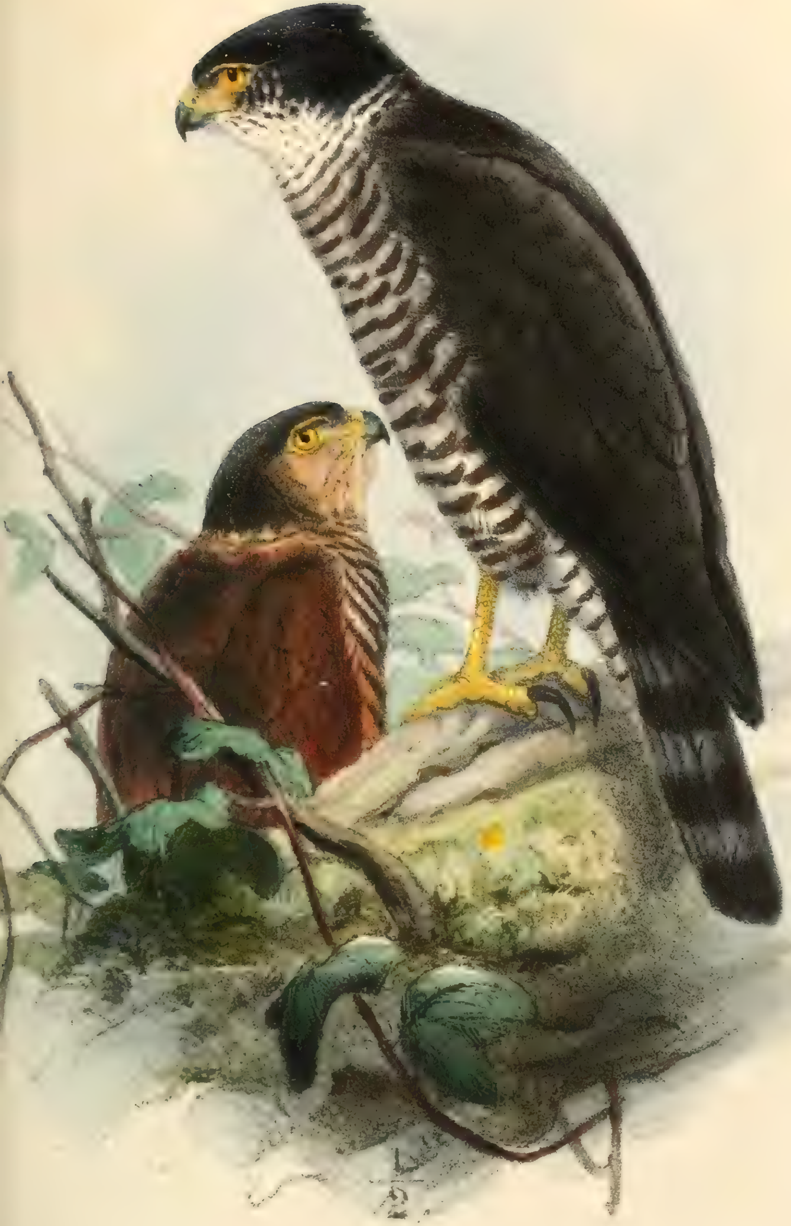
* Compt. Rend. xxxvii. p. 810.



The young bird referred to above is changing from rufous on the back to black. The nuchal collar is rather conspicuous. The bands are distinct on the sides of the breast, but the middle of the breast and belly are cinnamomeous white; the thighs deep rufous, the bands appearing round the lower part. The tail is rufous, with six distinct black bands, which do not show on the outer rectrices.

XVIII.—*On the Ornithology of Northern Africa.* By the Rev. H. B. TRISTRAM, M.A., F.L.S., C.M.Z.S. (Part IV. *Lake Halloula.*)

A FIVE hours' drive in the diligence from Algiers, one morning in May 1856, brought me to the pretty little Arab town of Koleah, on the southern edge of the Sahel range. I had started early, and had abundance of time after my arrival to search out a Moorish horsedealer, from whom I engaged a steed whose demeanour gave promise of more docility than spirit. The rest of the afternoon was occupied in procuring provisions, wine, and a pair of panniers of grass-matting, for my contemplated three or four days' excursion. In the year 1856 the road, now opened out by convict labour from Koleah through the forest to Cherchell, had no existence, and winding horse-paths, through which a pocket-compass was the most trustworthy guide, formed the only access to the lake, about thirty miles distant.

Having made my preparations, I turned in at the little hotel to toss sleepless through a stifling scirocco night; but rising at 3 A.M., saddled my reluctant horse, charged the panniers, and, wrapped in my burnous for protection from the suffocating wind, passed the gate of Koleah before 4 A.M. The air of the hot, still night, charged with the impalpable sand of the desert, felt like the blast from a baker's oven, and augured ill for comfort in the dense underwood of the forest. The sun had not yet risen as I passed the tall solitary palm on the brow of the Sahel which marks the old frontiers of Abd'el Kader's line after his first treaty with the French, by which all west of a line drawn from Blidah to the palm-tree of Koleah was conceded to the desert chieftain. Strangely has Algeria changed, when, but twelve years since that epoch, a solitary naturalist can in security prepare for a three days' lonely bivouac in the frontier forest. A well-marked track led me into the forest, not before I had had sufficient daylight to enjoy the vast panorama of the plain of the Metidjah stretched beneath, with the dark green orange groves of Blidah framing the white city in the distance, and the jagged line of the Atlas beyond, with a patch of thick mist overhanging a fissure in the mountain line, the famed gorge of the Chiffa. A Hyæna struck across my path as I entered the thickets, and soon after a pretty little Ichneumon kept running on almost fearlessly before me. Sitting across my pack-saddle, I had just missed a snap shot at a rabbit, when a strange scream from a matted lentisk bush arrested me—"Tschâgra, Tschâgra, chugra, chrug!" most inharmoniously repeated. I dismounted, approached, but could not see the hidden vocalist, though I struck the bush several times. At length a stone dislodged him, and I brought him down ere he had reached the next clump. It was a fine male specimen of *Telephonus cucullatus*, or *Tschagra*, aptly so named, and was the first I had ever seen. He is a beautiful bird in flight; his rich chestnut wings prettily contrasting with his long expanded fan-like tail of jet black with a broad white bar at its extremity. In his habits he differs much from other Shrikes, never showing himself, as they do, on the extremity of a branch, or in an exposed tree, but always concealed in the thickest recesses. "Heard, not seen," is his motto. I looked in vain for the nest, which was probably in the neighbourhood, as I saw another bird gliding through an adjoining thicket. A few days afterwards on my return I obtained a nest, the only one I ever took, placed in the centre of an arbutus bush, large and coarsely constructed of twigs with a thick lining of wool and hair, and containing four eggs. These were slightly larger than those of *Lanius excubitor*, of a white ground, very thickly covered over the whole surface with brown spots, and a few russet-red blotches, somewhat intermediate in character between those of the Shrike and the Lark. But for the closeness of the spots and their reddish hue they might easily pass for the eggs of *Certhilauda desertorum* in my collection. The

Hooded Shrike is not a desert bird, but is only a summer visitant to the Tell, retiring, however, very late, as I have met with birds of the year at the end of October. It seems strictly confined to the forest districts.

The path now diverged somewhat southwards towards the plain, and I was astonished on reaching the brow of the hill to find myself approaching a clearing, more like a Canadian back settlement than an Algerian "propriété." A man in a blue blouse emerged from a side path in front of me, bearing two pails of water. I rode up to him and inquired in French if I were in the right road for Halloula. The man turned round and with a vacant stare from a rosy Saxon face ejaculated, "Eh ?" Startled as by an apparition (though a very solid one), I exclaimed, "Why, you are an Englishman !" "Ees ; I bees from Staffordsheere," was the reply ; and, entering into conversation with him, I was astonished to find that I had reached an English farm, probably the only one in North Africa, the proprietor of which had a few months previously brought out two families of agricultural labourers, besides a young man who lodged with my companion. They had none of them been farther than the market of Koleah since their arrival, nor had they made any French acquaintances, having no neighbours except some Arab workmen who slept in outhouses or tents. Willingly accepting the invitation to have a talk with the "missus," I followed him to the cottage and found two families of bright English children, for whose sake the mothers sadly lamented the want of the schools of home. An infant lately born gave me the opportunity of telling them I was a clergyman, of which fact, from my Arab guise, they seemed at first incredulous, but gladly accepted my offer to baptize it. After holding a short service with the two families, who now, like many others, valued the religious privileges they had slighted at home, and having heard the children read the Testaments with which they had been provided before leaving England, I was preparing to depart, glad that I was able to leave as a *souvenir* of my visit a prayer-book and a few tracts, when the women hospitably begged me to take breakfast as my fee.

The men went off to the fields, and the matrons seemed in much alarm for their safety, as a few days previous, on the women going in the early morning for water, they had met two leopards in the path, since which neither they nor the children had ventured to leave the premises. I had some difficulty in making them believe that for a leopard to attack a human being unprovoked was, in those countries at least, unheard of; and they themselves confessed that the leopards ran away as fast as they did. But as the morning was passing, and I had no wish to encounter the leopards, with which the forest is well stocked, alone by night, I started again, with a promise to revisit my countryfolk and hold another service with them.

Turning back into the forest, I had only to pursue my course by any path that lay due west, and I should reach the open hills before nightfall. Again and again the Ichneumon (*Genetta afra*) crossed in front of me; and wherever the trees were sparse, the Woodchat and the Southern Shrike (*Lanius meridionalis*) might be seen; of both of which I obtained several nests. A pair of Kites, by their restless movements, betrayed their alarm; but finding the thicket round a great cork-tree impenetrable, I was obliged to be content with noting the spot for a future search, when I should be provided with a hatchet. Occasionally the Roller, '*Tschugrug*,' would rise screaming from a chestnut-tree, and, after making grotesque gyrations in the air, drop headlong into the forest out of sight and shot. I had, however, the satisfaction of obtaining my first "Geai d'Afrique," as the colonists term the Roller (*Coracias garrula*). The Algerian Chaffinch and Titmouse were frequent (*Fringilla spodiogena* and *Parus cæruleanus*), and I heard but could not see the Woodpecker and the Jay (*Garrulus cervicalis*); but, as in most forests, winged life was not abundant, except at the outskirts. In a lovely glade I dismounted for dinner under a thick ivy-clad oak (*Quercus ballota*), and hobbled and fed my nag. While lying there I obtained two or three Ringdoves (*Columba palumbus*), which Buvry has distinguished under the name of *Columba excelsa*, from the European bird, though I confess myself wholly unable to detect the differences. Many Turtle Doves of our common species were to be seen in every open, and I found a Nightingale's nest at the stump of a decayed tree, and two nests of the Algerian

Green-finch (*Chlorospiza aurantiiventris*, Cab.). Having packed my treasures, I remounted, and, riding on at a quick pace, reached the termination of the forest some two hours before sunset, and had the satisfaction of seeing the tall marsh of reeds which environs Lac Halloula about three miles before me, and about a mile to my right, on the slope, the white tents of a party of convict soldiers, who, under the charge of a Zouave guard, were engaged in the deadly work of cutting a trench from the lake to drain it to the sea, by taking it to a stream at the base of Mount Chenoua.

I met with a civil reception from the sergeant commanding the party, to whom I explained my errand, judiciously using the name of General Yusuf, with whom I was acquainted; and received the agreeable intimation that I could share his tent for the night. A "Boulet," or military convict, soon picketed my nag, while I produced nosebag and barley from the panniers, and the sergeant, being further conciliated by a handful of cigars and a half bottle of brandy, offered to send a couple of convicts with me to look for birds in the thickets near the lake. On inquiry I discovered among the Zouaves a young man who had formerly worked for MM. Verreaux at Paris. We fraternized at once, and sat down together on the ground to skin the specimens I had procured through the day. He raised my expectations to the highest pitch by telling me what I had not anticipated, that, besides the waterfowl, in quest of which I had come, there was not a richer field in the world for warblers than the low brushwood and tamarisk thickets at the head of the lake. It was now dark; and having subscribed a portion of my provisions to the common stock, I supped with the sergeant and corporals, and obtained a holiday for my Zouave friend that he might accompany me in the morning. Before turning in, I spread in the camp among the convicts an announcement that for all nests brought me *with the bird snared and alive*, within the next three days, I should pay at the rate of one sou per egg.

As I lay in the corner of the tent wrapped in my burnous, I was kept awake for some time by a party of Zouaves, whose political discussions were too amusing to suffer me to sleep. The debate turned on the necessity of enlarging the boundaries of France. "Annex Spain," said one. "The Spaniards cannot fight unless the English help them." "Three regiments of Zouaves could overrun Spain," added another. "But what would our English allies say to it?" interrupted a third. "Bah! let the English send two regiments of Écossais and take Portugal for their share. We will spare them that," replied the first. ["France is omnipotent, the army is France, and we are a match for all the rest of the army," is the *idée fixe* of every Zouave.]

Before dawn, my new acquaintance was by my side in fatigue dress; and after a hasty cup of coffee and a glass of quinine (a very necessary precaution), we are in the tamarisk grove. A little bird, something like a hen Redstart in appearance, glides through the bushes. "What is that?" "Becfin Passerinette." At length my companion brings him down. It is a prize indeed. The first *Sylvia subalpina* I have seen, and well shot. Soon we come on a little flock of them restlessly hopping from twig to twig; but no nests are yet to be found. They have evidently not yet begun to breed. We hear the reeling of Savi's Warbler (*Sylvia luscinoïdes*) again and again, but that part of the marsh is too deep for us to explore without poles. The Thrush Nightingale (*Sylvia turdoïdes*) keeps up an incessant din on all sides; and I miss a Bittern as it rises quietly as an owl, almost from our feet. We turn back to the drier part of the thicket; and one, two, three, nests of *Hippolais salicaria*, with their full complement of eggs, reward us in quick succession. Very different is the position and texture of its nest from that of our Willow Wrens. It is extremely compact and neat, not unlike that of the Goldfinch in general appearance, and not larger, placed generally on the bare fork or branch of a tamarisk, without the slightest attempt at concealment. The complement of eggs rarely exceeds four. As I pass a tall tuft of grass, I bend its top, and disclose the nest of *Sylvia melanocephala*, the commonest but not the least beautiful of the Warblers of Northern Algeria, where it is a constant resident. It builds sometimes in hedges or bushes, but more frequently in tall grass or herbage. The nest is loose, but very neat and round, and comfortably lined with hair and wool. The eggs bear some resemblance to those of the Robin, but are smaller, and always more distinctly and brightly spotted; and some approach closely those of the Grasshopper Warbler.

But let us search this coarse grass and tamarisk bed carefully; for here, says my guide, we shall find *Sylvia cetti*. I had the week before obtained a nest near Algiers, but had had no opportunity of watching the habits of the bird. I am again disappointed. The bird has just begun to sit, but has crept away on the first alarm, and, though we watch some time in the neighbourhood, she does not return. I take the nest with its precious contents of four brilliant red eggs, so strangely different from those of every other Warbler. In colour they are unique among eggs, and show no affinity with any allied species. They form a singular exception to the rule, that a connexion may be traced in all genera between the eggs of the different species. There is one constant type for all the other Aquatic Warblers. The *Saxicolæ, Turdinæ, Motacillæ, Alaudinæ, Tyrannidæ*, and others, however widely the extremes may vary, still bear some resemblance to the normal type. Not so with *Sylvia cetti*. Its affinity seems rather to be with *Prinia sonitans* (Ibis, ii. p. 50), and may indicate a closer alliance with that genus than has hitherto been admitted. The nest is very loose in its construction, placed in rushes or coarse herbage, its depth more than double its diameter, composed entirely of coarse grass outside and finer stems within, but with no lining of hair or feathers. I afterwards frequently saw the bird, but only for an instant at a time, as it invariably dips among the rushes, and will not take flight when disturbed. I never succeeded in noting its song, if it have one.

Turning back towards the trees, I am attracted by the song of a bird quite new to me, and, on searching, observe overhead a little sombre-clad warbler, which I shoot, and discover to be another species I have not hitherto met with—*Sylvia elaïca*, or *S. pallida* of Bp. I say *or S. pallida*; for though Bonaparte thus distinguishes the Algerian from the Greek bird, and states that it is smaller, I can discover no material difference in the specimens, and some of my African skins are quite as large as those said to be from the East. It is very closely allied to *Hippolais salicaria*, but has no tinge of yellow on its plumage. The nest, larger than that of its congener, and of rather different construction, I first found on this occasion, and have since frequently taken in Algeria; while the eggs are of a delicate pale "mauve" colour, spotted and streaked with dark russet. They are always larger than those of *Hippolais salicaria.* It builds on trees about six feet from the ground, preferring, as far as I have observed, the smooth branches of the olive or tamarisk, and is very easily discovered. My curiosity was excited by my companion's information that the Pallid Warbler was much larger and of a darker colour on the hill-sides than in the marshes; and, anxious to investigate the truth of his story, we left the plain at once for the wood (chiefly wild olives) which skirts the forest of Koleah. Here we found the Serin Finch already sitting,—its nest very like that of the Goldfinch, but scarcely so deep, smaller, and more warmly lined. There are few songsters to be compared for clearness of note to the Serin, which in Algeria is often tamed, and breeds freely in confinement. It is, I believe, a migrant here. While searching in the open wood, I was startled by a long-tailed blue bird, which I felt certain at once must be the Blue Magpie (*Pica cooki*). Not having heard of it as an inhabitant of Algeria, I went eagerly in pursuit, and again and again caught sight of it, but never within shot. It was wild and wary, but took no long flights. I do not feel the slightest doubt as to its being the Blue Magpie of Spain, probably only a straggler. The chase had led me some three miles up the hills, when I lost all trace of the bird, and was fain to wind my way back to camp, as I had left my companion below. However, on the way I shot *Sylvia olivetorum,* and thus solved the mystery of the large Pallid Warbler. There were several birds; and I afterwards obtained a nest. The eggs are exactly like those of *S. pallida* or *elaïca* in colour, but larger, and the nest is much inferior in neatness. A month afterwards I took a nest of this bird placed near the ground in brushwood. It appears to select a lower site for nidification than its congeners.

On reaching the tent I found several nests of eggs awaiting my arrival, but none of much interest, except a second of Cetti's Warbler, with the hen bird caught by the foot in a horse-hair noose. Humanity compelled me (somewhat reluctantly, I must confess) to release her, after robbing her.

The next day I arranged to devote to the wonders of the lake itself, well satisfied with my first foray among the Warblers of Halloula, which had added a new bird to the Algerian catalogue, and two new birds and three additional sorts of eggs to my collection.

Soon after daybreak we started on the lake in a decayed punt, the buoyancy of which we insured by filling it with tightly fastened bundles of reeds, so that if waterlogged, as it very soon was, it could not sink. A long pole was all we required for propulsion among the mud and weeds, as the open water evidently contained nothing to repay our researches. Numerous flocks, indeed, of the Mediterranean and Black-headed Gulls (*Larus melanocephalus* and *Larus ridibundus*) were screaming overhead; but these had not yet begun to breed (if indeed the scarce *Larus melanocephalus* does breed at all in Algeria, of which I never obtained any actual proof); and hundreds of lovely Terns were hovering about, or dipping headlong into the dark still water. These likewise were deferring all attention to domestic duties to the next month. I shot several, and found most of them to be the Whiskered Tern (*Sterna hybrida*); but mingled with them were many of the Black and Lesser Terns (*Sterna nigra* and *S. minuta*). *Sterna hybrida* is easily distinguished by its note, which is less shrill and more rapidly repeated than that of *S. nigra*; but in general appearance it very closely resembles the *Sterna arctica,* so familiar on our own Northumbrian coasts with its lake-red bill and feet, its black head and generally sooty plumage. I looked in vain for *Sterna leucoptera* and *S. anglica,* the former of which is said to be found here, but of the occurrence of which at Halloula I never obtained authentic evidence.

But the principal feature of the open water were the myriads of Crested Coots (*Fulica cristata*), Wigeons, and Pochards. The Wigeon never remains to breed; but flocks of them still lingered, while a month later not one was to be seen. The Crested Coot appears in no way to differ as to its habits from its well-known congener, though its red naked forehead, with the two conspicuous lobes, suffice to distinguish it at a glance. It is somewhat the larger of the two species; and the eggs run invariably from a quarter to half an inch longer than those of the Common Coot. Pushing among the reeds, we soon found two or three of their nests, some placed among the stumps of old reed-clumps, others in little openings on artificial mounds. I never found the Common Coot here; and though it certainly occurs on the lake in winter in company with its congener, I believe that each species confines itself to its own nesting-places. Thus, in the lakes I visited in Eastern Algeria the following summer, while *Fulica atra* abounded, *Fulica cristata* never once came under our observation.

As in our voyage we pushed and struggled through the reeds, occasionally the nest of *Sylvia turdoïdes* was exposed from two to six feet overhead, loosely built, and abundantly lined with feathers, but deep and strong, and elegantly interlaced between four or five tall reed-stems. Its principles of construction are exactly like those of the Reed Warbler of England; but in finish of workmanship or architectural skill, it falls far short of its cousin. I searched in vain for the nest of Savi's Warbler (*Sylvia luscinoïdes*), whose singular cadence could everywhere be heard. I was, however, rewarded by the discovery of a very pretty nest of *Sylvia aquatica,* with four fresh eggs. As I obtained the bird, the identification of this, the first nest of the species I had discovered, was complete. At the time I imagined it a very rare bird in Algeria, and so it is considered by the French naturalists; but I have since found it in small numbers in all suitable localities. Its shy habits, short and weak song, and its almost inaccessible resorts, necessarily remove it from notice. The nest is neat, but not suspended like that of our Reed Warbler (*Sylvia arundinacea*). It is entwined with four or five reeds, generally, but not always, resting on a tuft, and about two or three feet from the surface of the swamp. The eggs are for the most part marked with smaller blotches than those of the Reed Warbler, but not run together in the coloration like those of the Sedge Warbler. As it glides through the rushes, the black and yellow streaks on its head distinguish it at a glance from its congeners.

The Water Rail and Moor Hen breed here abundantly; and we were rewarded by a single nest of the Great Purple Gallinule (*Porphyrio hyacinthinus*). A magnificent fellow he is, as he rises sluggishly from a dense mass of water-weed, showing his rich purple sheen in the sun-light, and hanging behind him his huge pink legs and feet. His nest is very like that of the Coot; but the number of eggs seems fewer, four being the largest number I have taken in one sitting, though the complement was very probably not complete. I need not add anything to what Mr. Salvin has stated (Ibis, vol. i. p. 361), as to the predatory habits of this bird. The eggs surpass in beauty, to my eye, those of any other of the class; their rich pink ground, with their red, russet, and brown spots, are very characteristic.

Every here and there we came upon a nest of the Little Grebe (*Podiceps minor*), and occasionally upon that of the Great Crested Grebe (*Podiceps cristatus*); but it was rather late for both these species, which build before the end of April, and already several broods had been hatched. Still, fifty eggs of one and about a dozen of the other was not a bad morning's take. At length, in a little secluded opening, entirely surrounded by tall reeds, through which we had the greatest difficulty in forcing the punt, we came upon a colony of Eared Grebes (*Podiceps auritus*), the chief object of my search. There appears to be this singular difference between the Eared and the Crested or Lesser Grebes; that while the two latter, though abundant throughout the Lake, are not strictly gregarious, the former builds in societies more densely crowded than any rookery. It is also later in its nidification; for, of nearly fifty nests I examined, not one was incubated, though most contained their full allowance of four or five eggs. The nests, formed like those of other Grebes, were raised on artificial islets, frequently almost touching each other, and sometimes piled on stout foundations rising from more than a yard under water. The eggs are a trifle smaller than those of *P. sclavonicus*, which appear to do duty for them in many collections. We shot several of the birds, which, of course, were in very fine plumage, but we were not a little puzzled by the sudden disappearance of several which had fallen dead within twenty yards of us. At length, on pushing out in our punt into the open water, I detected the water-tortoises carrying off at great speed our wounded and dead birds; and following the streak of blood through the water, at length seized one struggling with his captor, who maintained so tenacious a grasp that I hauled him on board along with the bird, and took care to secure him, too, for my collection. With this proof of the carnivorous propensities of the water-tortoise, I am inclined to believe that the havoc in the nests of Coots and Ducks may often be attributed to this plunderer. Nor are the water-tortoise and the Purple Gallinule the the only "*oophagi*" against whom these poor birds have to combat in the struggle for perpetuating their species. A Water-snake frequently takes up his abode in a Coot's nest and boldly drives off the rightful proprietor. An empty nest seems to be his favourite dwelling-place; and if a Coot's or Water-Hen's nest be not tenanted by its owner, it usually supplies free quarters to a Water-snake.

None of the Ducks had yet begun to breed; and we searched in vain on the further or southern edge of the lake for the nests of the various Herons which were congregated in vast flocks in the neighbourhood, feeding through the day like rooks in the plains, and returning to the reeds to roost. I remained till near sunset, and watched them as they returned—first the graceful little Squacco, then white clouds of Buff-backs and Night Herons, with here and there a straggling Purple Ibis, like a *black* sheep in a flock, mingled with them; but we were evidently some weeks too early for their nests. Laden with booty, we returned through the stifling reeds as soon as we had seen the Herons safe to roost. But think not such a day's nesting "a rose without a thorn." The suffocating heat of the reed-bed, the intolerable stench emitted by the slightest disturbance of the slime and oozy matter on which we floated, and, above all, the voracity of the mosquitoes, penetrating ankles, wrists, face, and neck, impelled one to rush off half blinded, *οἰστροδίνητος κέντροισι φοιταλέοισιν*. Such is the penalty for intruding on the sacred preserves of Halloula,—not much less severe than Mr. Taylor's sufferings in Honduras.

Too wearied to attempt either to skin or blow eggs that evening, I flung myself down with a towel steeped in *vin ordinaire* over my swollen face, without even investigating the discoveries of the "Boulets." The next morning was devoted to making up the arrears of the last night's work, and looking over the captures of my scouts, which consisted chiefly of *S. hippolaïs*, two of *S. elaïca*, and one of *S. cetti*. They, however, brought me news of a nest of *Aquila chrysaëtos* in Mount Chenoua, and of a "digging" of *Merops apiaster* in a bank hard by. From the upper part of Koleah Forest a stream descends and feeds the Lake. Its banks are steep during the latter part of its course; and on working our way through the brushwood to the edge, we saw the lively Bee-eaters skimming like Swallows up and down the stream, or plunging into the holes they had burrowed. Unlike the Kingfisher, the Bee-eater does not show the brilliancy of his plumage when on the wing; it is only when perching, as it often does, on a bough overhanging the bank, that its bright and varied livery becomes conspicuous. After examining several holes and finding but one which contained a single egg, while the greater part of the excavations were as yet incomplete I resolved to inspect the Eagle's nest; so after a long tramp across the Sahel, and much parleying with the natives, for I had got out of the lines of the soldiery, I was taken to the cliff, where truly enough the Zouave had in his previous Sunday ramble detected a nest of "Ogab," which now, as I could plainly ascertain by my glass, contained two downy young. On my return in the evening, I was delighted to find two nests of the exquisite little Fantail Warbler (*Cisticola schœnicola*) brought in by some soldiers who had been cutting forage in the neighbourhood. This lively and attractive songster, scarcely as large as our Gold-crested Wren, is by no means uncommon in the moist meadows of Northern Algeria; but it is only by chance that its nest can be discovered, except by the mowers. The Pinkpink, as the natives call it from its note, constructs its dwelling about a foot from the ground, by entwining the living stems of grass with very fine cotton and spiders' webs. These, with the down of seeds, form the foundation; and as the nest is long in construction, the hen bird begins to lay, and even to sit, while her mate occupies his leisure in weaving higher and higher the walls of their little dwelling. I had the good fortune once to discover a nest just commenced at the edge of a meadow near Algiers, which I was in the habit of passing almost daily, and thus for more than a month I had a good opportunity of noting the Fantail's habits at my leisure. When the first egg was laid, the foundation of the nest was almost transparent, and its filmy sides not above an inch in height. I occasionally took an egg, leaving the dam to sit on five out of eight which she had laid; and during the whole period of incubation the male continued to enlarge and strengthen the nest, till, by the time the young were hatched, it was almost three inches in depth and of a tolerably compact structure. When completed, it is sometimes, but not always, half-domed at the top. The eggs, which are very little larger than those of the Long-tail Titmouse, are of a delicate pale-green or greenish-white, sprinkled with a few russet spots, not concentrated towards the larger end. The bird, which is extremely wary, hovers over the fields with a jerking flight, waving and expanding its tail, and then suddenly drops like a lark, but always at a distance from its nest,—which it leaves in the most cautious manner, dropping from it into the long grass, and running concealed for some yards before it takes wing. From the two nests now brought me I secured only three eggs, as the whole contents of one, the most complete, had been lost in the grass when struck by the scythe.

The next morning, having stored my treasures, and left instructions for the safe custody of my discoveries until my return the following month, I started with well though lightly filled panniers, and, after a halt at my secluded fellow-countrymen's cottages in the wilderness, returned in health, without any symptoms of fever, which is so dreaded by visitors to the Lake.

On the 10th of June I returned to Halloula by the same route to investigate the habits of the Herons and Ducks. This time, as the soldiers had all been withdrawn from the works for the summer, I secured the attendance of a professional chasseur, who was accustomed to resort to the district in winter for wild-fowl shooting. I learnt from the Zouaves at Koleah that many eggs had been amassed for me after my departure, but that an agent of M. Verreaux, having, unfortunately for me, passed that way, had secured the whole, the "Boulets" preferring a franc in the hand to a dollar in prospect. We remained for two days at the Lake, sleeping at night on the hillside in an extemporized *gourbi* of brushwood, just sufficiently up the slope to escape the risk of malaria from the marsh. We found two nests of the White-headed Duck (*Erismatura mersa*) among the sedge, containing, the one three, the other eight eggs. These are very large for the size of the bird, almost perfectly elliptical in shape, and a line longer and wider than those of the Velvet Scoter, of an extremely rough texture, unlike that of any other Duck, more resembling the egg of the Bean Goose, but far more coarsely grained, and of dull white colour. The habits and flight of the bird are more like those of a Grebe than of a Duck; it often saves itself by diving, and remains under water for a considerable time.

I saw several pairs of the Pochard (*Fuligula ferina*) and one pair of Red-crested Whistling Ducks (*F. rufina*), but could not discover their nests. The White-eyed Duck (*F. nyroca*) seemed tolerably abundant on the Lake, and one nest rewarded our research. At length we arrived on the southern side of the Lake, and pushed through to the Heronries. Here we had to leave our punt, and to struggle through the slime on foot. We soon came on a large colony of Squacco Herons (*Ardea comata*), who were just beginning to sit. About thirty or forty nests were scattered about in various directions, in a dense bed of reeds piled up to the height of two or three feet from the mud, supported on tufts of reeds, and composed of great heaps of water-weeds and rushes. Each nest contained three or four eggs; and very few were incubated. The birds left as we approached, rising clumsily from the reeds and making a deafening noise. The bright-green egg of the Squacco is, I presume, well known to all collectors, and is of exactly the same tint as our Common Heron's. Plunging on a little further, we came upon the quarters of the Buff-backs (*Ardea bubulcus*), who were in still greater numbers, and their nests very closely packed. Among them, as they rose, I saw a few Purple Ibis (*Falcinellus igneus*). The separate identification of the nests was of course impossible; but after some search, we discovered two nests of Ibis, differing from the Herons in their less lavish expenditure of materials, and containing each three eggs.

They had not been incubated, and the complement was probably not complete. No one could mistake the rich-blue eggs, so much rounder and smoother than those of the Herons. I have been told that a few years since the Ibis was comparatively plentiful, but has been almost extirpated by the French chasseurs, and I do not believe that there now remained more than these two pairs. The nests of the Buff-back contained generally four eggs, sometimes but three, and had for the most part been incubated for a few days.

Further back and to the eastward we found a few nests of the Night Heron (*Nycticorax grisea*),—not crowded like the others, but still in society. They too had been sat on for a little time. They were well concealed, and not always easy of detection among the matted roots of the reeds, though almost on the ground. While the egg of the Buff-back is of a delicate greenish-white, and varies much in size and shape, that of the Night Heron is of a pale green, far more delicate than the Common Heron, but somewhat approximating to it. I may remark that I never in Algeria obtained or saw this bird in the first year's spotted plumage. All we noticed were in full adult dress.

The next day I resumed my quest, and obtained a single egg of the Red-crested Whistling Duck in the open swamp. My companion shot the bird as it rose from the nest. *Fuligula rufina* breeds sparingly at the Lake, but remains there throughout the winter. The males appear to desert the locality as soon as the females sit, and are never seen again until the end of autumn. I have observed that the female erects her scanty crest in imitation of her mate, and proudly throws back her head, walking with a stately gait. The nest is like that of the Coot, but not so large, better concealed, and without the gangway of rushes built by the other.

Searching for the nesting-place of the Terns, I was surprised to find the whole colony of Whiskered Tern (*Sterna hybrida*) breeding in the nests of the Eared Grebes above described,—and that, apparently, without having at all repaired the nests, which could have been only a few days evacuated by their constructors, as we saw hundreds of young Eared Grebes paddling about and diving in the open lake with their parents. My series of eggs of *Sterna hybrida* shows a decided tendency to pale green as the ground-colour, and a type clearly distinguishable from that of any other Tern, though somewhat approaching the character of the eggs of *Sterna leucoptera*, which, however, are much smaller, and only exceptionally of a greenish ground. The markings are rarely so large as in the eggs of the Common Tern. A favourite food with these Terns appeared to be a large hairy caterpillar which covered the neighbouring marshes at this time in thousands. They were also plunging into the Lake in quest of the frogs and newts with which it abounds.

I had now thoroughly searched the recesses of Halloula, but in returning had to learn that there is "many a slip between the cup and the lip," for our punt grounded and discharged all my loosely packed boxes into the mud. I saved, however, sufficient to provide an ample series of those species which I had taken in any plenty, and returned to Algiers without further incident, laden with spoils such as do not often fall to the share of a naturalist's first sojourn in a new locality. I found that the following year, owing to the success of the drainage, this paradise of Herons was almost deserted. By this time I fear that the glories of Lake Halloula are among the things that were. The plough will soon efface the traces of our Heronry, and the Ibis and the Whiskered Tern will be numbered with the Ruffs of Lincolnshire and the Great Copper Butterflies of Whittlesea.

XIX.—*Ornithological Notes of the Voyage of 'The Fox' in the Arctic Seas.* By David Walker, M.D., late Naturalist on board 'The Fox.'

The steam-yacht 'Fox,' equipped by Lady Franklin for the final search after Sir John Franklin and his companions, left Aberdeen on the 1st of July 1857. The different birds met with on the passage across the Atlantic need not be mentioned. As we approached Cape Farewell, the most southern point of Greenland, numbers of the Greater Shear-water (*Puffinus major*) were seen. On coming closer to the coast, the Fulmar (*Procel-*

laria glacialis) first appeared, and was thence met with as far north as the expedition sailed. It being necessary to enter the Danish port of Frederikshaab, 'The Fox' screwed her way through the Spitzbergen icestream, and, piloted by some Eskimos, anchored in the harbour. Here some Ravens (*Corvus corax*) were seen flying about; and numbers of the Eider Duck (*Anas mollissima*) and King Duck (*Anas spectabilis*) were shot on the spot. On landing and passing through the valleys, specimens of the Snow Bunting (*Emberiza nivalis*), Lapland Finch (*Plectrophanes lapponica*), and Sandpipers (*Tringa minuta* and *T. interpres*) were met with. A few Falcons (*Falco grœnlandicus* and *F. peregrinus*?) were wheeling overhead; and a specimen of an Eagle (*Aquila albicilla*?) was seen. The Snowy Owl (*Strix nyctea*) was also observed. Among the sea birds were Jagers (*Lestris parasiticus*), Gulls (*Larus marinus, L. glaucus, L. tridactylus, L. argentatus*), and Guillemots (*Uria troile,* and *U. grylle*).

On 31st July we anchored in the harbour of Godhavn, having passed up the coast of Greenland and having encountered numbers of Mollymokes (*Procellaria glacialis*) and Gulls of different kinds mentioned before, and in addition *Larus leucopterus* and *L. eburneus*. At Godhavn we obtained specimens of the following species:—

Tetrao reinhardtii
Strepsilas interpres
Tringa minuta
Charadrius pluvialis
Motacilla alba
Sterna arctica
Anser bernicla
Anas marila
A. acuta
A. histrionica
A. glacialis
Anas fuligula
A. spectabilis
A. mollissima
Colymbus glacialis
Uria brunnichii
U. troile
U. grylle
Alca torda
A. alle
Phalacrocorax carbo.

We hove-to off Usserivinck on 6th August. Here two specimens of an Eagle (*Aquila albicilla*?) have been obtained during the last twenty years, this (73° N.) being the highest northern locality in which they have been seen. In passing up Baffin's Bay, and in Melville Bay, myriads of Rotches (*Alca alle*) were met with. Owing to the prevalence of S.E. winds, unfortunately, we were beset in the ice in Melville Bay, and drifted south over 1200 miles, until our deliverance in April 1858. During this dreary winter, we obtained a few specimens of the Dovekie (*Uria grylle*) in its winter plumage; once a solitary Ptarmigan (*Tetrao lagopus*?) pitched on the ice near the ship, and was almost immediately devoured by the dogs. On returning up the coast of Greenland in the summer of 1858, some thousands of Looms (*Uria troile* and *U. brunnichii*) were shot, and in Melville Bay great numbers of *Alca alle*. We were so fortunate as to obtain some of the eggs of this latter bird at the breeding-place near Cape York. Here we found myriads of them flying in and out of the stones which form a detritus to the primary rock. These birds lay a single egg in the hollows between the stones, where the foxes and gulls cannot reach them. Numbers of *Larus glaucus* were flying about; and one Phalarope (*Phalaropus fulicarius*) was seen.

The only bird worth noticing seen at Pond's Bay, in lat. 72° on the west coast of Baffin's Bay, was a Crane (*Grus canadensis*). It is rarely met with so far north.

The winter of 1858–9 was spent at Port Kennedy, in the mouth of Bellot Straits, 72° 11′ N., 94° W. During this season a few Ptarmigan (*Tetrao lagopus* and *T. saliceti*) were shot; a Winter Dovekie (*Uria grylle*), a Snowy Owl (*Strix nyctea*), and some Ravens (*Corvus corax*) were seen. The first birds which made their appearance in May were Snow Buntings (*Emberiza nivalis*) and Lapland Finches (*Plectrophanes lapponica*). As the month progressed, a few Burgomasters (*Larus glaucus*) and Silvery Gulls (*Larus argentatus*) were seen, and flocks of Geese (*Anser bernicla*) were noticed flying northward. Early in June, Ducks (*Anas mollissima*, *A. glacialis*, and *A. spectabilis*) began to assemble in the pools of water near the shore, and some Divers (*Colymbus arcticus*, *C. septentrionalis*, and *C. glacialis*) were shot. Numbers of *Tringa minuta* and *T. interpres* were found breeding in the marshy valleys; also Plovers (*Charadrius pluvialis* and *C. hiaticula*). Several Falcons (*Falco peregrinus*) were shot. Some Geese (*Anas bernicla*) and Gulls (*Larus glaucus* and *L. leucopterus*) built their nests on the cliffs which form the sides of the

Bellot Strait. No Ptarmigan were obtained in their summer plumage, as they had all left in April. A peculiarity worth noticing about these Ptarmigan is the relation between the length of the intestinal cæca and that of the intestine. Only one specimen of the Willow Grouse (*Tetrao saliceti*) was examined; in this the cæca were 27 inches long, gut 36 inches: in five specimens of Ptarmigan (*Tetrao lagopus*?) the proportion was 20 : 38, 19 : 43, 21 : 42, 22 : 45, 18½ : 39. I subjoin a minute description of these parts of our *Tetrao lagopus*. Two *cæca* arise at the side of the intestine, 5 inches from the anal orifice; they are connected to the gut by membrane for 2 inches. Hence (tracing only one cæcum), after these 2 inches it doubles upon itself for 2½ inches, the two parts being closely connected, and then is joined to the intestine for 1½ inch by a broad mesenteric membrane; it leaves the intestine again, doubling upon itself for 5 inches, and then, very closely tied to the gut, it runs along it for 6½ inches, ending in an abrupt point 2 inches long, unconnected to the gut. Length of cæcum, 20 inches; of gut, 38 inches. I may remark that Sir James Ross, in the Appendix to Parry's Third Voyage, states that he found, in the *Tetrao lagopus*, the cæca two-thirds of the length of the intestine; in the above case they were not one-half.

This paper is not introduced as containing any novelty, as the ornithology of the Arctic regions is now so well known; but only as an enumeration of the different species met with.

XX.—*On the Eggs of the Nutcracker and Parrot-billed Cross bill.* By the Rev. H. B. Tristram, M.A., F.L.S.

I felt inclined to communicate a few remarks, prior to the publication of the last Number of the 'Ibis,' on the Review of recent oological works which appeared in No. 4, but I have deferred doing so in the hope that Mr. J. Hancock, who had proposed to supply some notes on the breeding of *Loxia pityopsittacus*, *Totanus ochropus*, and *Fuligula cristata*, might by this time have fulfilled his intention.

All conscientious collectors must, I am sure, most heartily agree with the writer of that review in the earnest tone with which he deprecates the too easy admission into cabinets of unauthenticated specimens. One or two careless admissions of spurious eggs deservedly destroy the reputation of a whole collection. Still, while disclaiming any desire to look upon "my own geese as swans," I must confess to having assigned a place in my cabinet to one species which the reviewer considers as awaiting the exertions of the Alpine Club to bring it to England for the first time—the Nutcracker. I am not aware that any other collector in this country pretends to its possession, and therefore a note of the eggs, and the manner in which I became possessed of them, may not be out of place in 'The Ibis.'

In the year 1844, which I spent in Switzerland and Savoy, while yet a very young ornithologist, I became acquainted with a shepherd and chasseur in the valley of Sixt, with whom I used to make excursions. I was then ignorant of the rarity of the Nutcracker's eggs, though I obtained two specimens of the bird, which I still possess. In the year 1854 I revisited the valley in the course of a walking tour, and hunted up my old friend, who rejoiced in the very common cognomen of Balmat. In conversation I asked him whether he ever collected any eggs; he said No, but afterwards told me he had taken a nest of the '*Casse-noix*' in the spring, and had the eggs at home. It appeared that, being in the pine-forest in the month of March (as far as he could recollect, the second or third week, before the snow was off the ground), he had discovered the nest of a Nutcracker on one of the lower branches of a pine, well sheltered by another branch closely covering it, and containing four eggs. The tree he described as growing very close to the side of a precipice, in descending which he had first descried it. The four eggs were strung up in his kitchen. As he had never taken a Nutcracker's nest before, he would part with only three of them, on which, however, he set no very great value, as he asked but five francs for the lot. One of these I unfortunately smashed a few days afterwards, the other two I still possess. They measure 1·27 inch in length, ·9 inch in breadth, and are of a dun colour, without the greenish hue of the Magpie's, and are thickly covered at the larger end with large brown blotches, which become very sparse towards the middle of the egg. I certainly never saw any variety of the eggs of the Common Magpie which would pass for them; and when I take into consideration that the Nutcracker is a common bird in the pine-forests of Sixt, for I have never spent a day there without seeing it several times—that it also *does breed* there, for I have seen the young birds scarcely able to fly among the trees—that Balmat was perfectly familiar with the Nutcracker, and had no temptation to deceive, since he was evidently ignorant of the rarity of the egg, as may be gathered from the price he asked—that neither the Magpie nor the Jay is found, so far as I am aware, in those forests—and that my specimens exactly coincide with authentic German eggs,—I do not think that I am justly amenable to the criticism of your reviewer if I claim authenticity for these specimens. The evidence does certainly appear to me the next best to that of actual capture by oneself. Human testimony is fallible; but if admissible at all, as Mr. Wolley admitted it in the case of the Smew, I think it may pass here.

As to *Loxia pityopsittacus*, Mr. Wainwright has sent home from the southern forests of Sweden the nests and eggs of several pairs of Parrot Crossbills, with the head of the hen-bird attached to each. One of these nests, through Mr. Hancock's kindness, is now in my possession. The nest does not differ, except in size, from that of the Common Crossbill; but the eggs, while similarly marked, are invariably larger. Mr. Hancock in 1858 received a nest which, from the size of the eggs, he suspected must belong to this bird, and consequently sent directions to have the birds snared in the nests, and forwarded to him, carefully attached. Both species appear to breed at the same early period, and the four nests of the Parrot Crossbill thus identified arrived along with a greater number of those of the common bird.

Mr. Wainwright has also corroborated Herr Bädeker's account of the Green Sandpiper's sometimes breeding in old Fieldfares' nests in trees, as he has forwarded eggs, now in my possession, taken by him in trees, which exactly correspond with those taken by myself near Bodoë in 1852 in hillocks of grass, and figured by Mr. Hewitson in his last edition. Mr. Wainwright does not appear to have found it breeding at all on the ground. Probably its habits in this respect are determined by the locality.

While on the subject of the Review in No. 4, I may remark that I cannot condemn Herr Bädeker for inaccuracy in extending the range of the Common Kingfisher to Africa. I have repeatedly seen and shot it in Northern Africa, and, unless I am strangely mistaken, have also watched it in the Island of Rhodes.

XXI.—*Note on the Eggs of the Eared Vulture and the Wedge-tailed Eagle.* By John Henry Gurney, M.P., F.Z.S.

A specimen of the Eared Vulture (*Vultur auricularis,* Daudin), formerly in the Surrey Zoological Gardens, and now in my possession, laid an egg on the 15th February, 1859, which is correctly figured in Dr. Bree's work on European Birds, from a drawing made by Mr. Reeve of the Norwich Museum. On the 23rd February in the present year, the same bird laid a second egg, differing from the first only in being slightly more elongated, and in the rufous colouring on the obtuse end of the egg being considerably more intense. In the bird which laid these eggs, the fleshy folds on the side of the neck (from which this Vulture derives its specific name) are amply developed, proving that these appendages are not limited to the male sex.

I have also in my possession a pair of Wedge-tailed Eagles of Australia (*Aquila audax,* Lath.), which were formerly in the menagerie at Knowsley. The female of these laid an egg on the 28th February of the present year. The distribution of the rufous spots on this egg presented an intermediate appearance between the two specimens figured in the Zoological Society's Proceedings for 1850 (Aves, pl. 19. p. 91). As the female bird appeared desirous of incubating the egg, she was allowed to retain possession of it till the third day, when it was found to have been broken,—but how, I am unable to say.

XXII.—*Memoir of the late* JOHN WOLLEY.

THE memory of the Naturalist whose death makes the first gap in the small society of the promoters of 'The Ibis,' while it inflicts on science in general a serious loss, deserves more than a passing notice in these pages, and the writer of this Memoir, who was closely intimate with JOHN WOLLEY during his latter years, deems it a duty, at once melancholy and pleasurable in no ordinary degree, to place on record the few bare facts of his brief career.

Sprung from a Derbyshire family of fair repute and antiquity, the deceased naturalist was born at Matlock, May 13th, 1824, being the eldest son of the Rev. John Hurt and Mary his wife, eldest daughter of Adam Wolley, Esq., of Matlock, a gentleman well known as a local historian and the donor of a valuable collection of manuscripts, still called after him, to the British Museum. At the decease of his father-in-law, in 1827, Mr. Hurt assumed the name and arms of Wolley *.

At an early age John Wolley was sent to Mr. Fletcher's preparatory school at Southwell, which in 1836 he quitted for Eton, where he remained for the next six years. A love for the study of nature showed itself even in the days of his childhood, though at that time plants and insects shared his attention fully as much as the higher classes of creation, which at a later period became mainly the objects of his study. Indeed, while at Eton, in his own words, he was "always about the country in all directions in pursuit of Natural History," and he assiduously collected insects and eggs, while he "knew every plant that grew about." With all this, he was one of the foremost in every manly sport; and his recollections of having been captain of a "long-boat" and in "the eight," while also one of the "oppidan" eleven, and that of "the school" at foot-ball, were always among those in which he most delighted.

In October 1842 he went to Cambridge, and entered upon his residence at Trinity College. For one who had just quitted the sixth form at Eton and did not intend to take a degree in honours, not much reading was necessary, and with Wolley's tastes, it is not surprising to find that most of his time while at the University was passed in the Cambridgeshire and Huntingdonshire fens and woods, which then afforded a rich field for the researches of a naturalist. In the long-vacation of 1845 he started on a trip to the south of Spain, and after visiting Cadiz, Seville, and Gibraltar, crossed the Straits to Tangier. Here he unexpectedly found a keen egg-collector domiciled, at that time known to but few naturalists in Europe, and perhaps to none in England. Though at first only the cabinets of Wolley himself and his immediate friends were benefited by the discovery, the knowledge of Mons. Favier's readiness to oblige other oologists soon spread, and to their general advantage. It is true that the eggs thus rendered attainable to British collectors were such as at present are no longer accounted scarce; but the progress of the study is marked by the fact that at that time an experienced ornithologist like the late Mr. Yarrell considered such eggs as the Pratincole's and Stilt's, brought home by Wolley, as "the rarest he had ever had." Mr. Hewitson, too, was thereby shortly afterwards enabled to give, for the first time, a correct figure of the egg of the Egyptian Vulture in the edition of his well-known work then approaching completion.

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* Mr. Hurt's father married the only daughter of the celebrated Sir Richard Arkwright. Further particulars relating to the families of Hurt and Wolley will be found in Sir J. B. Burke's 'History of the Landed Gentry.'

In January 1846, Wolley graduated as a B.A. and left the University. He then went to live in London, and entered at the Middle Temple with the intention of studying law. But more congenial pursuits chiefly occupied his attention, and though he kept the terms necessary for a call to the bar, the reading-room of the British Museum was more frequently his haunt than the chambers of the special pleader, and the design of following a barrister's profession was subsequently abandoned. Profiting by the opportunities he enjoyed, he at this time mostly busied himself with studying the works of the older naturalists. The writer has been unable to ascertain precisely at what period the idea first occurred to Wolley's mind, but it was certainly not later than this year (1846) that he began carefully to examine and collate all the historical evidence relating to that extraordinary extinct bird, the Dodo, and in pursuing the search for authorities he was led to make a minute study of the records of ancient voyages. This he did without any knowledge of the labours towards the same end which were then being prosecuted by the late Mr. H. E. Strickland, for it was not until the close of the next year that he became acquainted with that gentleman's design of immediately bringing out a work on the subject. Wolley had by that time collected a considerable mass of materials; but directly he saw an announcement of the contemplated publication of 'The Dodo and its Kindred,' he at once communicated the principal results at which he had arrived to Strickland, whose admirable monograph bears no unwilling testimony to his appreciation of the assistance thus generously proffered and to the value of the knowledge acquired*.

In the summer of 1846, accompanied by one of his cousins, he made a tour in Germany and Switzerland, throughout which he neglected no opportunity of acquiring ornithological information, while in the course of it he achieved a successful ascent of Mont Blanc,—an exploit not then of the frequent occurrence that it has since become.

Towards the end of the next year (1847) he repaired to Edinburgh and joined the medical classes at that University, where he diligently applied himself for the next three years to the course of study necessary for attaining a physician's degree, and with so much success that, during his last session (1850–1), he was elected Senior President of the Royal Medical Society,—the highest mark of respect his fellow-students could bestow on him†. The vacations, however, he devoted to what now became his main object—the desire of forming an oological collection all the specimens of which should be thoroughly well authenticated, and by consequence not only really serviceable to, but worthy of, a study pertaining to the Exact Sciences. To gain this end, no labour was too severe—no personal hardship too great for him to undergo.

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* The writer begs leave to acknowledge here the kindness with which Sir William Jardine has placed at his disposal copies of, and extracts from, several of Wolley's letters to Strickland, written at this period. It may be added, for the benefit of any naturalist who, at some time or other, may turn his attention to the matter, that Wolley was strongly of opinion that, assiduously as Strickland had worked, the amount of information to be yet derived from a more extended research, such as would be afforded by several of our public and private libraries, was far from being exhausted,—if indeed their dust did not still bury the knowledge of facts bearing on this remarkable group of extinct organisms far more interesting than any that had been resuscitated.

† Kindly communicated to the writer by Professor Goodsir.

Accordingly, the summer of 1848 found him visiting the northern extremity of our island, and he extended his excursion to the Orkneys and Shetlands. This was probably more with the intention of obtaining a personal knowledge of the localities, to be made use of on a future occasion, than with much expectation of then adding to his collection, for the egging season was already far advanced. The chief capture on this tour was that of a pair of Sea Eagles, which were transmitted to the residence of a relation at Matlock, where subsequently a mass of rocks, perhaps in by-gone years tenanted by the other native species, was wired over, and the plan of the cage thus formed, having been brought to the knowledge of the late Secretary of the Zoological Society, suggested the first idea of the fine Eagle Aviary which now adorns the Gardens in the Regent's Park.

Profiting by the knowledge he had gained the preceding year, he started early in 1849 for the North, and during a journey throughout Caithness and Sutherlandshire, most of which was performed on foot, devoted himself to investigating the habits of the larger birds of prey, which, as he perceived, the combined efforts of sheep-farmers, game-preservers, and so-called natural-history collectors were so soon to render nearly extinct in that district. The principal results of his experience on this and subsequent occasions were communicated to Mr. Hewitson, in the last edition of whose work Wolley's observations were deservedly embodied, with the prefatory remark, no less happy than true, that he had "become as familiar with the king of birds as others are with Crows and Magpies." Leaving the British Islands in the month of June, he visited the Færoes, and passed several weeks studying the ornithology of those islands, for which his activity and fearlessness in rock-climbing afforded him so great an advantage. An account of the birds of this interesting group was read before the Natural

History Section of the British Association for the Advancement of Science at their meeting in Edinburgh the following year, and the paper will be found printed in full in Sir William Jardine's 'Contributions to Ornithology for 1850.' At the next Cambridge Commencement, July 1850, he proceeded to the degree of M.A., and at the close of the winter session 1850–1, he quitted Edinburgh.

After another expedition to the Highlands, in the course of which he became acquainted with some Eagle localities in Argyllshire and Perthshire of remarkable interest, he again took up his abode in London, and continued to reside there until the spring of 1853. During all this time he was thoroughly devoted to the object he had most at heart, and while by no means unmindful of his former literary researches, in which he now comprised much investigation relative to a species probably nearly extinct, the Great Auk, he took especial care to extend his acquaintance among other naturalists, with whom his peculiarly quiet manner and unassuming demeanour speedily rendered him deservedly popular *.

At length, in the spring of 1853, Wolley was enabled to put in execution a plan the idea of which had for several years haunted him, and to make an excursion of far greater extent than any he had hitherto accomplished. Not only had he from his boyhood rejoiced in the thought of one day visiting the land of Gyrfalcons and Capercaillies, Bears and Wolves, but, of late, the very unsatisfactory nature of our knowledge respecting the nidification of various birds, among which were some of our commonest winter visitants, had been constantly present to his mind. English oologists had more than twenty years before visited Iceland and the coast-region of Norway, making discoveries of remarkable interest; it was therefore but reasonable to suppose that some sort of similar success would attend investigations carried on in still more northern latitudes. The pages of Mr. Yarrell's

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* The writer may perhaps be excused for mentioning here, that it was in October 1851 that he first became personally acquainted with Mr. Wolley. For some years previously they had carried on a pretty frequent correspondence on natural-history subjects, and this now led to a closer intimacy, resulting in a friendship which continued to the last.

work recorded the results of Mr. Dann's visit to Lapland, and moreover an acquaintance of Wolley's had only three years before made a tour in that country, and brought back specimens and intelligence sufficient to excite the ardour of a moderately keen naturalist. Then, again, there was the geographical consideration that, from the very configuration of the land, the country lying between the Arctic Ocean and a large inland sea like the Baltic would probably be found to offer to many species of birds peculiar advantages as a breeding station. All this determined him upon making an expedition to the district lying at the head of the Gulf of Bothnia. On the 23rd of April he left Hull for Gothenburg, on his way to Torneå, which place he intended to make his head-quarters. Provided with good introductions, at Stockholm he obtained valuable intelligence from Prof. Retzius and the late Herr Wahlberg, who has since so unfortunately met his death in South Africa, and who had been not long before on a botanical tour in Lapland. Having secured the assistance of a student of the University to act as interpreter, Wolley started off again, undeterred by the prospect of a journey of 900 miles in a rough carriage, and at a season of the year when, the winter-ways being broken up, and the multitude of wide rivers still choked with rotten ice, travelling is deemed by Swedes all but impossible. The journey was not, however, without its reward. In the course of it he discovered the Eagle Owl's nest, his graphic description of which reached England just in time to be of use to Mr. Hewitson. At length he arrived at Haparanda, a small frontier village opposite the Russian town of Torneå. Northwards from this place, Finnish is the language almost exclusively used, and it therefore became necessary here to engage a second interpreter. This added to the difficulties of the expedition; for those only who have experienced it can be aware of the trouble and annoyance entailed by the employment of a third language, especially in making known to an ignorant population wants of which they have hitherto had no idea, and by means of interpreters to whom they are equally strange.

It is not within the scope of this memoir to relate at length the different stages of Wolley's journey. It will suffice to say that, embarking on the river Torneå, he followed its course across the Arctic circle, until its junction at Kengis with the Muonio, continuing along the latter stream as far as Muonioniska,—his intention being to reach Jerisjärvi, a large lake recommended to him at Stockholm as an advantageous locality for his operations. He found, however, that the more immediate neighbourhood of Muonioniska offered greater facilities, and here accordingly he passed the short polar summer, working incessantly, often for more than twenty-four consecutive hours, in the vast marshes near it, until he had completely exhausted the powers of his two interpreters and his troop of beaters. At the end of July he retraced his steps, intending to return at once to England, but on arriving at Haparanda he found letters which made him resolve to pass the winter in Lapland, and accordingly, dismissing his companions, and entrusting to one of them the spoils of the campaign to be sent to some friends at home, he again ascended the river and took up his quarters at Muoniovara, the house of a trader, opposite the Russian village of Muonioniska.

During the winter he occupied himself partly in pursuit of the scanty stock of game which the dense surrounding forests afforded, and in unsuccessful attempts at bear-hunting, but more particularly in visiting every house within a radius of many miles, inquiring of the inhabitants respecting the birds of the district, and engaging their services for the ensuing spring. Meanwhile his boxes of eggs arrived in England, and the reception by the public of a small portion of them, submitted to sale by the late Mr. J. C. Stevens, was very encouraging to his future labours ;—genuine eggs of the Jack Snipe, Broad-billed Sandpiper, and other birds it had never previously been in the power of British, or probably of foreign collectors to procure. Towards the spring he crossed the Kjolen mountains with reindeer into Norway, and proceeded by sea from Tromsoe to Hammerfest, whence in a short time he returned with the last snow to his head-quarters by way of Kautokeino, near which place he successfully scaled a dangerous rock for a nest of the Gyrfalcon. Arrived at Muonioniska, he soon afterwards had the opportunities of taking the eggs of the Crane, which he has so vividly described in these pages (Ibis, 1859, p. 191), and a few days more saw him again ascending the river to its parent lake, Kilpisjärvi, among the mountains. No great success attended him here; but in his voyage back, under circumstances of which a thrilling account was communicated to Mr. Hewitson's pages, he met with rather better fortune, though he obtained little else than some eggs of a species, the Scaup Duck, which were already known to collectors. On his return to Muonioniska, he stayed there only long enough to ascertain the particulars of the collections which had accumulated for him, and was off again, this time for England, which he reached in August. Depositing his treasures, including eggs of the Shore Lark, Siberian Jay, Spotted Redshank, Temminck's Stint, and Little White-fronted Goose, with the same friends as before, he departed in a few weeks a second time for the North, and travelling by way of Berlin (where he did not forget to inspect Savery's Dodo-picture) and Stettin to Stockholm, caught the last steamer for the Bothnian Gulf, and reached Muonioniska just before the closing of the river navigation.

The following winter he passed much as he had the preceding one. The breaking out of the Russian war indeed placed him within a short distance of the enemy's territory, but fortunately did not materially affect his movements, which, as regarded incursions on the Finnish side of the frontier, were wisely overlooked by the local authorities. Still great caution was necessary, so as to give no possible excuse for any measures that might circumscribe his operations. In the spring of the next year, 1855, he repeated his journey to Norway, and, leaving the Muonio and adjoining valleys to be worked by people whom he had especially instructed, he proceeded along the coast eastward of the North Cape to Wadsö. From this remote town he crossed the Waranger Fjord to the outlet of the Patsjoki or Paswig river, ascending it until he reached the great Lake Enara, which had been the locality previously assigned by too credulous collectors for many a fabled rarity. He found its shores singularly destitute of anything ornithological, but on the way there he was rewarded by the sight of Wild Swans' nests. Returning to Wadsö, he joined Mr. W. H. Simpson and Mr. Alfred Newton, whose arrival he had been for some weeks expecting, and in company with those gentlemen he continued the remainder of the summer, exploring the shores of the Waranger Fjord and lower district of the Tana. They then proceeded by the coast to the Lyngen Fjord, and crossed to Kilpisjärvi, at which famous lake boats were waiting to take them to Muonioniska. After a month's delay here, principally enlivened by the discovery of some nests of the Pine Grosbeak, the party returned to England by the usual route.

The winter of 1855–6 Wolley spent at home. In the following spring he set out with Mr. Simpson for the Baltic, and passed the egging season chiefly in the island of Œland and on the adjacent coast of Sweden. Mr. Simpson's principal success in this expedition has been already recorded by him in the pages of this Magazine ('Ibis,' 1859, p. 264), and in his narrative of it he attributes to Wolley's suggestions the chief results. Wolley himself was rather led away from living birds to pay attention to the barrows, stone-circles, and other relics of a former age with which Œland in particular abounds, and he was at much pains to examine many of the numerous sacrificial and burial places in that island, and to collect organic remains from them. While thus employed, he received a pressing invitation from Prof. Retzius to go with him to the meeting of Scandinavian naturalists then about to be held at Christiania, and accordingly repaired thither, where he read three papers:—1st, "On the Recrystallization of Fallen Snow;" 2nd, "On the Swarm of Lemmings in Lapland in 1853, the Birds that accompanied it, and their Mode of Breeding;" and, 3rd, "On the Improvement of the Breed of the Reindeer." The meeting over, he returned to Copenhagen, and thence went to Stockholm, on his way to Lapland.

On his arrival at the Swedish capital, he received intelligence of a very unexpected and almost unhoped-for discovery, made a few weeks before by persons in his employment,—a discovery by far the most interesting and important to ornithologists that was destined to result from his labours. He hurried on to Muonioniska to obtain the details, which he found to be of a most satisfactory nature. The time may probably come when oologists will have a difficulty in comprehending with what delight the naturalists of this generation hailed the tidings, that the mystery with which the nidification of the Waxwing had hitherto been enshrouded was dispelled. At Wolley's especial request, the intelligence was communicated to but a few of his most intimate friends at home, one of whom (the late Mr. Yarrell), it was his wish, should make public the news. Before, however, the letters announcing the great event reached England, that excellent gentleman had been laid in his grave, and the discovery was accordingly first announced in a short paper communicated by Wolley himself to the Zoological Society of London, and read at the meeting held March 26th, 1857. Soon after, the public had an opportunity of testifying their appreciation of this new acquisition to oology, and the result was, that a higher price was obtained for each of the three eggs of the Waxwing—offered for sale at Mr. Stevens's rooms—than had ever been known before, except in the case of those of a species presumed to be extinct. The full particulars of the discovery have yet to be given to the world.

The winter of 1856–7 passed with Wolley much as usual, though, in his letters to his most constant correspondents, he complained of being less able than formerly to withstand the rigours of the climate. In the spring he again set out for Norway; but this time he chose another route, proceeding through the almost unexplored country nearly due north of Muonioniska, until he struck upon the head-waters of the Tana, and, descending that river, reached the Waranger district, which had been partially examined by him and his friends in 1855. He was attracted thither by the report that, some years previously, a Swedish naturalist had there met with a breeding-place of the Knot; but the locality assigned was found on examination to be a mountain covered with perpetual snow, and Wolley met with but little to compensate him for his loss of time and labour. When, towards the end of the season, he again returned to Muoniovara, he found a large number of eggs collected for him, and, before he left for England, he had the additional gratification of receiving, from a remote district in Finland, some eggs of the Smew, the first known to have been obtained by any naturalist. An account of this, the last great oological discovery he was enabled to make, he contributed to this Magazine ('Ibis,' 1859, p. 69), and it detracts nothing from the value of the other articles to say that his paper is certainly the most interesting which appeared in the first Number of 'The Ibis.'

He remained in England during the winter of 1857–8, and began diligently working up the subject which he had long been considering, and then took seriously in hand—the natural history of the Great Auk. With the view of seeking information at the fountain-head, and, if possible, of solving the moot point of the bird's present existence, in April 1858 he sailed for Iceland, accompanied by Mr. Alfred Newton. After passing some weeks at Reykjavik, the capital of that island, they repaired to the village of Kirkjuvogr, being the nearest settlement to the Fuglasker off Cape Reykjanes, where examples of this bird were last seen. Here they remained two months, in vain waiting for weather when a landing on these distant and dangerous rocks would be practicable. The country around possessed but few attractions for the ornithologist; but Wolley was indefatigable in seeking for information from the mouths of persons who had formerly visited the Skerries, and was successful in procuring from them many valuable and interesting particulars relating to this bird. A considerable number of bones of the species, found at various places along the coast, were also collected, and these, together with the intelligence just mentioned, were the only results of the expedition worth recording here; for, owing to the constantly unsettled state of the weather, not a single opportunity presented itself when it would have been in any degree possible to reach the rocks. After a hasty trip to the celebrated Geysers, Wolley returned to England, calling on the way home, as he had done on his outward voyage, at the Färoes, where he not only renewed his former acquaintance with many of the inhabitants, but obtained further useful information respecting the subject to which he was devoting himself.

Soon after his arrival in England, Wolley began to find his general health, which had hitherto been exceedingly good, failing, without any apparent reason. He suffered from languor, at times to a most painful degree, and his former energy seemed to have departed from him. This did not, however, prevent his going to the meeting of the British Association held at Leeds in September. Here he read two papers: one, "On a fresh form of Crystallization which takes place in the Particles of Fallen Snow under intense Cold," being the same subject on which he had remarked two years before at Christiania, and which another winter in the North had enabled him to study more particularly; and a second, entitled "Observations on the Arrangement of small Stones in certain bare Levels in Northern Localities." He was subsequently present at the Field-meeting of the Tyneside Naturalists' Club, held at Marsden, October 22nd, being the last time he was to attend any scientific assembly. The distressing feelings of lassitude continued at intervals throughout the winter and following spring; but still neither he nor those about him were much alarmed by them. As the summer drew on, he fancied his bodily strength in some degree restored; but at the same time he was aware of an occasional loss of memory, which became now and then very apparent in his letters to his friends. In the month of July an accidental and trifling occurrence brought on an attack of a much more serious character, and he then placed himself under regular medical treatment. No improvement in his symptoms taking place, it was recommended that further advice should be sought, and accordingly he went to London, where the opinion of one of the highest authorities in the profession—himself since removed by death—was taken. Dr. Todd (for he was the physician consulted) at once declared that the case was one in which no hope of recovery could be entertained, that there was an affection of the brain, probably of long standing, and that a speedy change would take place. These fatal words were fulfilled to the letter; not many days passed before Wolley experienced another violent attack, from which he only once, and for a short time, rallied. He then seemed quite aware of his approaching end, and expressed his wishes respecting the place of his burial and the disposal of his oological collection. On the 20th of November 1859, after having for some hours lapsed into a state of complete unconsciousness, he expired without suffering.

His last wishes have been faithfully carried out. In accordance with them, his remains were interred in the churchyard at

Matlock—his birth-place—and his vast collection of eggs has been handed over to Mr. Alfred Newton, whose intention it is to publish a full catalogue of the treasures it contains, as a fitting memorial of him who formed it. Wolley had been for some time in the habit of sending yearly to the Museum at Norwich most of the skins of the birds obtained by himself or his agents in Lapland. Since his decease, his father has handsomely presented to the same deserving institution the remaining portion of the collection, where it will be known as the "Wolley Donation," and where it must always form an object of no common interest to naturalists, particularly to those engaged in the special study of the local variation of species, as well as to those who, through Wolley's generosity, or his annual sales *, have become possessed of duplicates of his eggs, many of which are thereby thoroughly identified. It has been, and always will be, a matter of regret, that his active mode of life and his premature death prevented his giving to the world the connected account of his discoveries, which he had meditated. But it is hoped that the copious notes which he was so careful to make on almost every occasion will enable their present possessor to remedy this deficiency in some degree, in the catalogue which he contemplates publishing. Wolley had, however, already made known many valuable results of his experience, which will be found chiefly in the pages of 'The Zoologist,' and in the last edition of his friend Mr. Hewitson's admirable work on Oology.

To describe John Wolley's character at any length is not the intention of the writer. He has attempted, without the desire of unduly exalting the value of Natural Science, to give in outline the chief events of a life which, if the study of God's creatures deserves any encouragement, cannot be said to have been uselessly spent; and if unswerving devotion to the cause

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* The amount realized at these sales has been greatly exaggerated by rumour, especially on the Continent. The writer has the best possible authority for stating that the *gross* receipts of the seven sales which took place between 1853 and 1859 inclusive, did not exceed £940. From this must be deducted *all* expenses, the amount of which is not easily computed; but some idea of their extent may be gathered from the fact that, in *one season alone*, collecting the eggs of *a single species* cost Wolley nearly £90.

of Truth merits any praise, must be declared to have been honourably passed. The facts here narrated are left to speak for themselves; on them must Wolley's reputation rest. It would add little to them to state that in the various capacities of relative, friend, and companion, there was little wanting in him, for such encomiums are too often applied without due cause. His good qualities are treasured in the recollection of those who knew him, and especially of one to whom he gave the last token of his esteem, and who, having endeavoured (how imperfectly no one knows better than himself) to discharge a duty owing to the memory of a deeply lamented comrade, cannot conclude this sketch without an expression of gratitude at having been permitted to share so largely the intimacy of such an upright man.

March 1860.

XXIII.—*Recent Ornithological Publications.*

1. English Publications.

The concluding part of the Zoological Society's 'Proceedings' for the past year was issued in February last, and contains, as usual, a large number of Ornithological papers, by Messrs. Bartlett, Gould, F. Moore, Sclater, and J. Verreaux, for details of which we refer our readers to the book itself. The illustrations of this part have not yet been issued, owing to the pressure of business upon the artists employed to execute them.

By the kind favour of the author, Mr. G. R. Gray, we have received an early copy of the 'Catalogue of the Birds of the Tropical Islands of the Pacific Ocean in the Collection of the British Museum.' The object of this list, as we learn from the preface, "has been, to give a complete catalogue of the species of birds (under their respective specific names with their synonyms) found on the numerous islands of the Pacific Ocean which are situated within the tropics, between the longitudes of 134° E. and 130° W."

"Latham, in his 'General Synopsis,' was the first author who described the different species of birds of the numerous tropical islands, specimens of which were obtained or were represented in the many drawings made by Sydney Parkinson, the Forsters, and Ellis during the three voyages undertaken by the great circumnavigator Cook. To them are added those recorded in the Zoological portion of the different foreign voyages of discovery, as well as others which have been procured by the more modern collectors."

The Catalogue is certainly a most useful book of reference for Ornithologists, and must have cost much time and labour in its compilation.

The number of species enumerated as found within the area above mentioned appears to be nearly as follows :—

		In B. M.	Not in B. M.	Total.
I.	Accipitres	2	12	14
II.	Passeres	63	80	143
III.	Scansores	12	20	32
IV.	Columbæ	24	35	59
V.	Gallinæ	2	2	4
VI.	Cursores	1	0	1
VII.	Grallæ	11	25	36
VIII.	Anseres	6	42	48
		121	216	337

It must be remarked, however, that "specimens of some of the species" noted as *not* in the British Museum from these islands are there from other localities; also that some of the names included in the list are probably synonyms of others, such as "*Tatare longirostris* (?)," which we have already shown to be = *Tatare otaitiensis* (Ibis, 1859, p. 327). Some others are probably due to errors in locality. It would have been a good plan to have given the name of the authority after each locality. This, however, can be *generally* obtained from the accompanying synonyms.

Besides the "Narrative of a Visit to the Island of Formosa," mentioned in our last Number (p. 89), the second part of the 'Journal of the North-China Branch of the Royal Asiatic Society' (Shanghai, May 1859) contains a second paper by Mr. Swinhoe, entitled "Notes on some new Species of Birds found on the Island of Formosa." The following species are described: *Calamanthella tintinnabulans, C. volitans, Prinia striata, Hydro-*

bata marila, *Garrulax taëwanus*, *Pomatorhinus musicus*, and *Centropus dimidiatus*. *Calamanthella* is a form of the Warblers (*Malurinæ*) allied to *Prinia* and *Calamanthus*, subsequently (Ibis, 1860, p. 51) united by Mr. Swinhoe to *Cisticola*. The Formosan Dipper (*Hydrobata marila*) is likely to be the same as the Japanese bird *Cinclus pallasi*, but requires comparison.

Mr. Blyth's report of the additions made to the Museum of the Asiatic Society of Bengal for September 1859 (Journ. As. Soc. Beng. xxix. p. 411) gives an account of an interesting collection forwarded by Major S. R. Tickell from Moulmein, obtained in the interior of the Tenasserim provinces. We notice in particular *Buceros tickellii*, Blyth; *Picus atratus*, Blyth; *Sibia melanoleuca*, n. sp.; *Ixulus striatus*, n. sp.; *Abrornis superciliaris*, n. sp.; *Pellornium tickellii*, n. sp.; *Turdinus guttatus*, n. sp.; *Tropicoperdix chloropus*, n. g. and sp., and specimens of *Podica personata*, G. R. Gray. Various Himalayan, and more especially S.E. Himalayan species, form part of the collection, as already noticed (Ibis, 1859, p. 466). Besides *Palæornis erythrogenys*, Mr. Blyth has also received the following additional species from the Andamans: *Palæornis alexandri*, *Todirhamphus collaris*, *Gracula intermedia*, and *Anous stolidus*, and a new Woodpecker, *Picus andamensis*.

Mr. Blyth says, "The Garganey and Pintail are the two commonest species of Ducks in Lower Bengal during the cold season; at least they are brought in by far the greatest numbers to our provision-bazaars, and are pre-eminently the 'Wild-duck' and 'Teal' of our tables. Our most common Pochard is the White-eye (*Fuligula nyroca*). The Gadwall, Shoveller, Wigeon, and true Teal are tolerably common, as also the Red-crested, the Tufted, and the Dun Pochards: the Shieldrake is not rare; but the Mallard I have never seen yet, though assured that it has been shot so near as Ránigány. *Casarca rutila* is common."

2. French Publications.

The second and third part of M. Malherbe's work upon the *Picidæ* have been issued. We cannot agree with the author in arranging the East Indian *Hemilophus validus* with the American

Dryocopi or *Campephili*. The bird figured and described as "*Megapicus sclateri*, ♂," is a female, as is shown by the receipt of further specimens from Mr. Fraser. The male has the front and sides of the face red. (See P.Z.S. 1860, p. 71.)

To the 'Arcana Naturæ,' a work intended to illustrate new and remarkable natural objects, now in course of publication at Paris, M. Jules Verreaux contributes a figure and description of a beautiful new *Ortyx*—*Cyrtonyx sallæi* (vol. i. pl. 4), allied to *C. massena*, from Mexico.

In the 'Revue et Magasin de Zoologie' for November last are two Oological articles. M. Moquin-Tandon writes general "Considérations sur les Œufs des Oiseaux." Amongst those species the eggs of which are of a size disproportionate to those of the parent, M. Moquin-Tandon might well have mentioned the *Apteryx*. In this bird the egg equals in weight nearly *one-fourth* of that of the parent (see P.Z.S. 1859, p. 350). M. O. Des Murs, in speaking of the egg of the *Balæniceps*, reprints the notes published by M. Verreaux in the 'Edinburgh New Philosophical Journal' for 1855. In this we think M. Des Murs has acted unwisely; for, as we have already shown (Ibis, 1859, p. 471), there is every reason to believe that M. Verreaux's correspondent was altogether in error on the subject. If the statements of Mr. Petherick, who procured the eggs upon which M. Des Murs bases his observations, are correct, which we have no doubt is the case, the *Balæniceps* does not eat tortoises, but fishes!—builds on the ground in the reeds, and not in trees!—and certainly does not lay spotted eggs, as M. Des Murs himself candidly allows!

The same Magazine for January of this year contains a continuation of M. Moquin-Tandon's article, and an attempt on the part of M. Des Murs to prove, upon oological grounds, that our Common Sparrow does not belong to the Finches (*Fringillidæ*), but to the Weaver-birds (*Ploceidæ*)! We merely remark that *Passer* does not present the first short primary, the distinguishing character of the latter family upon which Prince Bonaparte based the separation of the two groups.

The eleventh volume of the 'Mémoires de la Société Linnéenne de Normandie' (1859) contains a note by M. Eudes-Deslongchamps on the singular Pigeon of the Marquesas Islands, described by the late Prince Charles Bonaparte as *Serresius galeatus* (Compt. Rend. xli. p. 6). The peculiarities of the skeleton are chiefly spoken of.

3. German, Dutch, and Scandinavian Works.

Dr. Hartlaub's "Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1858" (Report on the Progress of Ornithology during the year 1858) will be read with pleasure by every one who takes an interest in this branch of Zoology. It appears in the well-known German Natural History Magazine called 'Wiegmann's Archiv für Naturgeschichte,' now edited by Professor Troschel.

We have not yet met with Grässner's 'Die Vögel Deutschlands und die Eier.' It appears to be a new and revised edition of Neumann and Buhle's 'Eier der Vögel Deutschlands.' Two parts were published at Halle in 1859.

We have received the fifth part of Professor Bädeker's 'Eier der Europäischer Vögel,' of which work we have already given a lengthened notice (Ibis, 1859, p. 400).

A new number of the 'Contributions to Zoology' of the Royal Zoological Society of Amsterdam* contains two Ornithological papers by Professor Schlegel of Leyden, which, it is perhaps almost unnecessary to say, are, like all the results of his investigations in Natural History, of great value. The first is a "Notice sur le genre *Corvus*," of which Prof. Schlegel is acquainted with 33 species, as follows:—

I. *Rostro maxime elevato*, CORVULTURES.

1. *crassirostris*, ex Abyssinia.	2. *cafer*, ex Afr. Merid.

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[*] Bijdragen tot de Dierkunde uitgegeven door het Koningligk Zoologisch Genootschap *Natura Artis Magistra*, te Amsterdam.

II. *Melanoleuci*, Cornices.

3. *scapulatus*, ex Afr.
4. *pectoralis*, ex imp. Sinensi.
5. *advena*, ex Celebes.
6. *cornix*, ex Europ. et Asia Bor.
7. *splendens*, ex Ind. Penins.

III. Coraces.

8. *corax*, ex Eur., As. Bor., et America Sept.
9. *japonensis*, ex Japon.
10. *culminatus*, ex Penins. Ind.
11. *corone*, ex Europa.
12. *coronoides*, ex Austral.
13. *umbrinus*, ex Afr. Bor.
14. *macrorhynchus*, ex Java, Borneo, et Timor.
15. *orru*, ex Nov. Guin.
16. *brevipennis*, ex ins. Philipp.
17. *senex*, ex Nov. Guin.

IV. *Affines* C. americano.

18. *americanus*, ex Am. Bor.
19. *solitarius*, ex ins. Haiti.
20. *mexicanus*, ex Mex.

V. Frugilegi.

21. *frugilegus*, ex Eur. et As. Bor.
22. *capensis*, ex Afr. Merid.
23. *minor*, ex Arabia et Nubia.
24. *validissimus*, ex Gilolo.
25. *validus*, ex Sumatra, Borneo, et Timor.
26. *enca*, ex Java.
27. *violaceus*, ex Ceram.

VI. Ossifragi.

28. *ossifragus*, ex Am. Bor.
29. *leucognaphalus*, ex ins. Haiti.
30. *affinis*, ex Abyss.

VII. Monedulæ.

31. *monedula*, ex Eur., As. Bor., et Afr. Bor.
32. *dauricus*, ex Asia Orient.
33. *neglectus*, ex Japon.

The paper is illustrated by twenty-eight drawings of the heads of different *Corvi*, which will be of great assistance in determining the species, and by figures of *Corvus advena* and *Corvus senex*. Of the former Mr. Wallace has forwarded many examples from Celebes (Macassar), which settles the question of its locality (unknown to Prof. Schlegel). It is not, however, quite undescribed, being the *Gazzola typica* (!) of Bonaparte, of which we have already spoken in these pages (Ibis, 1859, p. 113). Prof. Schlegel does not appear to be acquainted with Prof. Baird's 'Report on N. American Ornithology.' There are certainly more *Corvi* in America than those contained in Prof. Schlegel's list. Whatever we may think of the American Ravens

C. cacalotl and *C. carnivorus,* there can be no question that the *Corvus nobilis* of Gould, *C. cryptoleucus* of Couch, and *C. jamaicensis* are good species.

The second paper of Prof. Schlegel is on the *Corvus pyrrhopterus,* discovered by Forsten in Gilolo, and the type of Bonaparte's genus *Lycocorax.* It is accompanied by a figure. In this case we think that Bonaparte's generic name should be used. The bird is no *Pica* (!), but allied to *Barita* and that group. Mr. Wallace has lately forwarded several examples of it from Batchian.

The third volume of the 'Acta Societatis Indo-Neerlandicæ' (Batavia, 1857), which we have only lately seen, contains an article by Dr. H. A. Bernstein "Over de zoogenoemde eetbare Vogelnesten en den Nestbouw van eenige andere javasche Vogels." This appears to have been the origin of the paper in Cabanis' Journal alluded to *antea,* p. 94. The same volume also contains "Contributions to the knowledge of the Hornbills of Sumatra" by H. von Rosenberg. In addition to the nine species enumerated in the 'Verhandelingen' as found in Sumatra, the author has met with *Buceros plicatus* and *B. corrugatus.* He observes also that the *B. gracilis* of Temminck is the young of the latter species.

From Sweden we have a 'Comparative List of the Birds of Scandinavia and Great Britain *,' printed in English and Swedish, very convenient for the numerous English travellers who now visit Norway.

In the 'Ofversight af Kongl. Vetenskaps-Akademiens Förhandlingar' for 1858, Herr Conservator W. Meves has given an account of a zoological tour in Lappmark, which contains many notes on birds, and will be interesting to such as understand Swedish. In the same volume will be found some remarks by C. G. Löwenhjelm on *Sylvia tithys* and *Emberiza lapponica.*

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* Carlstad, 1859, 18 pp. London: Trübner & Co.

IV. AMERICAN PUBLICATIONS.

The only papers relating to Ornithology which have appeared in the 'Proceedings' of the Academy of Natural Sciences of Philadelphia since our last issue are upon the birds collected by Mr. Xantus at Cape S. Lucas, at the southern extremity of Lower California, by Mr. Xantus himself and Prof. Baird. The new species are described by Mr. Xantus as *Picus lucasanus, Campylorhynchus affinis, Harporhynchus cinereus,* and *Brachyrhamphus hypoleucus.* Prof. Baird gives a general list, enumerating forty-two species. "The Fauna" of this region, he says, "is almost identical with that of the Gila river, and to a certain extent with that of the Rio Grande. It is an important fact also, that, while these relationships are exceedingly intimate, there is almost none to the coast-fauna of Upper California."

XXIV.—*Letters, Extracts from Correspondence, Notices, &c.*

MR. FRASER, whom we last noticed as collecting at Babahoyo, on the river Guayaquil, has forwarded a series of about 360 birds obtained there during the months of July, August, and part of September last. They are not generally in a good state of preservation, having been attacked by insects, but there are many new and interesting species amongst them, of which an account will be given in the 'Proceedings' of the Zoological Society. A letter dated Babahoyo, August 28th, says: "This place is some 200 miles up the river from Guayaquil, and in the wet or summer season is under water for many months, some four or five feet; so you may imagine what a nasty, sickly place it is. The inbitants are always complaining, more or less, of fever. The houses are of sticks, with sides of bamboos. At present people are living on the ground-floor, but as the waters rise they ascend their ladders and occupy the first floor. All communication then takes place by canoe, and the cattle are driven off to the higher lands. A white butterfly is here in myriads, and always seems to be going up stream."

Mr. Fraser left Guayaquil for Esmeraldas, higher up the coast, in the beginning of October, and collected at the latter place until the end of December. His last letters (dated Panama, Jan. 6th & 15th) announced that he purposed leaving by the Central American mail of the 18th of that month to join Mr. Salvin in Guatemala.

Mr. Blyth in his last letters (dated Calcutta, Jan. 8th & 21st) speaks of an apparently new species of Cassowary (*Casuarius*) in the aviary of the Bábu Rajendra Mullick of Calcutta: "It has a yellow throat, a single yellow throat-wattle, and a long stripe of naked yellow skin down each side of the neck. In its present (first) plumage, it is of a much lighter colour than the young of the Common Cassowary of the same size, two of which are kept along with it; and from the size of the legs, it is easy to perceive that when full-grown it is a much smaller species."

The following extracts are from Mr. Osbert Salvin's last letters:—

"San Geronimo, Vera Paz,
Nov. 29th, 1859.

"The day before yesterday I arrived here from Coban, having spent three weeks there altogether, during the whole of which time I was kept hard at work skinning. The whole number of skins I obtained reaches to 600, of which I prepared myself about 400. They were all shot near the town by the boys with their pea-shooters, and so dexterous are some of these young rascals, that they would, in one day, sometimes, bring me as many as fifty. I paid them at the rate of $1\frac{1}{2}d.$ a piece, but for larger birds, according to their size. I cannot now give you an exact summary of the collection, but I will just run through some of the best. In the first place, I found a man who had, among some common things, three *Cotingæ amabiles*, which of course I secured. If what they tell me is true, it would appear that this species makes a vertical migration, and is found in the summits of the hills about Coban during the months of January, February, and March; the other months it spends on the 'tierra caliente.' The skins I have just obtained are from the latter locality. Of Humming-birds I obtained sixteen species, one of which I take to be new: it is a *Petasophora*; its general colour is brownish, and it has a gular stripe running down the throat of faint blue and green; the ears are blue*. I have also obtained some good specimens of *Lophornis helenæ*, which pleased me much; the rest are common. I enclose a comparative list of the Humming-birds of Dueñas and Coban: when I have time, I mean to make out a similar list of the birds of the two places as complete as I can.

"A specimen of a *Penelope*, which was brought to me, appears to answer well with *P. niger*; it is not at all rare in the mountains. An *Ortalida* is also found there. A female *Euphonia gouldi*, a fine specimen of *Botaurus lentiginosus*, a female *Gyparchus papa*, and several others which I do not know, form the best part of my collection. One of the very commonest birds about the town is *Elainia vilissima*. I also obtained three specimens of *E. placens*. I think, too, you will be rather pleased with the *Mniotiltidæ* and *Vireones*; but I hardly know with what amount of satisfaction you will receive the intelligence that I have certainly three, perhaps four, species of *Caprimulgidæ*. At Coban the coast-species and those of the cold country are much mingled, and I think that after a very careful scrutiny the number of species exclusively belonging to one or the other will prove small in comparison. I wish you would look very carefully at a specimen marked in my collection *Trogon puella* from the Pacific Coast region. I cannot help feeling sure that it is not the same as the bird found in the mountains of Coban, which, as I am assured, is exclusively a bird of the cold region. The species of Coban has a *black* ring round the eye; *Pharomacrus paradiseus* has the same; so I am told by a man who has shot many. I should also like to know what is the colouring of the chin and lower parts of *Pteroglossus torquatus*, as I have a skin from the Rio Polochic which I fancy is different. I have set two men to work to collect for me in the coast-country, north of Coban, and I have great expectations that they will work well for me. I have made arrangements to return to Coban in January, when I hope to shoot some Quesals myself; the bad weather and the quantity of work the small boys gave me to do prevented me from penetrating into their localities this last visit. That I worked hard you can imagine, when I tell you that I skinned twenty-seven birds at a sitting. I leave shortly for Dueñas, when I shall set about arranging this collection and despatch it, as well as the birds I have now there, which amount to some 200. This place where I am now staying is situated at the western end of the plain of Salamà. The climate is hot, and consequently I find some 'tierra caliente' species; *Icterus gularis* is common; I have also *Ceryle amazona*, and a beautiful species of *Momotus**, of which I do not know the name. *Amazilia corallirostris* is also found, and an *Œdicnemus*, which I have not yet been able to shoot. It was interesting to hear some of the people at Coban talk of Delattre's visit, and of what he did and where he went. It seems that they have been in the habit of shooting and collecting birds ever since that time. Another thing I ascertained which will be interesting to British zoologists, viz. that *Nauclerus furcatus* breeds in the mountains about Coban. My chief ally and collector there found a nest with young last year. Of course, I am making every endeavour to secure the eggs next season. He tells me I am tolerably certain to obtain them."

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* It is *Petasophora delphinæ*.—Ed.

Comparative List of Humming-birds of Dueñas and Coban.

DUEÑAS.	COBAN.
Petasophora thalassina.	Petasophora delphinæ.
Eugenes fulgens.	Eugenes fulgens.
	Phaëthornis adolphi.
Amazilia arsinoë.	Amazilia riefferi.
Campylopterus rufus.	
,, delattrii.	Campylopterus delattrii.
	,, pampa.
Chlorostilbon osberti.	
Cyanomyia cyanocephala.	Cyanomyia cyanocephala.
Heliomaster longirostris.	
Delattria viridipallens.	Delattria viridipallens.
Heliopedica melanotis.	Heliopedica melanotis.
	Eupherusa eximia.
Myiabeillia typica.	Myiabeillia typica.
Trochilus colubris.	Trochilus colubris.
Selasphorus heloisæ.	

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* This is *Eumomota superciliaris*.—ED.

DUEÑAS.	COBAN.
Selasphorus platycercus.	
Delattria henrici.	
Lamprolæma rhami.	
Thaumastura henicura.	Thaumastura henicura.
	Thaumantias candidus.
	Lophornis helenæ.

"Dueñas, Dec. 31st, 1859.

"My trip to Vera Paz terminated a few days ago. As yet, I have not been able to arrange my collections, which are large, so as to be able to say more than what I wrote to you by last mail. I have been, and am exceedingly pleased with the results, and have gained a vast deal of information as regards the knowledge of the geography of the country. I fear you will be rather staggered by the number of birds I am sending—some 800; but I little knew, when I first arrived at Coban, what powerful assistance I was going to have when I employed the small boys and their pea-shooters to bring me birds at a *quartillo* ($1\frac{1}{2}d.$) a piece. The skins from San Geronimo reach 100, and those I previously had here 250. Of those from the former place, some are interesting, especially the beautiful Motmot, which is common there; I also found *Tryphæna duponti* and *Amazilia corallirostris.* The plain of Salamà is, as you will see on the map, connected by a tributary of the Rio de la Passion with the northern coast-region of Yucatan. On the opposite side of the southern range of hills which bound the plain, not five leagues from Salamà, at a place called Choacas, at about the same elevation, the watershed changes into that of the Motagua or Rio Grande. Consequently I found, on passing from San Geronimo to this last-mentioned place, some five or six birds I had never observed at San Geronimo,—and my list of the birds of San Geronimo includes about 100 species. The changes of the physical features of this country have surprised and puzzled me much. The divisions seem to be these: First, the northern and southern coasts, which include the dense tropical forests; next come the arid plains and hills, such as those of Zacapa and Salamà, also a hot country; next the tablelands, which include the *Altos*; and apart from these I place the

Alta Vera Paz, as it is called, of which Coban is the principal town. This so differs in its contour, soil, and productions, as to render it sufficiently distinct from the last division, though also a cold district. Of birds, some are especially confined to each of these divisions, but by far the greater number are common to two or more, and many to all. They seem more distinctly defined by the botanical productions; Palms, the *Cieba,* and mahogany, being characteristic trees of the coast-forests; *Mimosæ* and *Cacti* of the second division, evergreen oaks of the table-lands, and the trees called in Coban *Pimienta, Liquidamber,* and *Palo Santo,* illustrating the last.

"My present collection of snakes, lizards, frogs, &c., is not large, but I intend sending what I have, also the few mammals and butterflies, so that I may clear out everything this month, ready for a fresh start, as in the beginning of February I go again to Coban, intending to collect a little on the Motagua on my way. At Coban I mean to shoot some Quesals, and go on, if possible, to Cajabon; after that, to the mines of Alotepeque and Copan, and perhaps on to Tequicicalpa in Honduras.

"I cannot find any land-shells, though I have looked for them frequently; all I have in that way are some two or three species of freshwater shells from the Lake of Dueñas."

Mr. Wallace's last communications are dated Amboyna, Oct. 22, 1859, whence he has sent us the valuable contributions to our pages which we have the pleasure of inserting in our present Number. He further says,—

"I have just packed up a large collection of Gilolo and Ternate birds, as well as those from Menado. The former are a much gayer lot, comprising a fine series of *Pitta maxima,* a new *Megapodius,* I think, handsomely banded on the back, and a *Semioptera,* which differs a little from the Batchian specimens in the much greater length of the breast plumes and other details. Is the *Calænas* the true *nicobarica*? If so, it is a unique case of a true land-bird ranging through the whole Archipelago, and beyond its limits from the Andamans to New Guinea. I do not know where Bonaparte got his information about its being arboreal. Here it is truly terrestrial, perching only to rest and sleep.

"It is astonishing how little care even professed naturalists have given to determining localities. The localities of species given by the 'Dutch Scientific Commission' are full of errors. *Ptilonopus monachus* and *P. hyogaster* are given to Celebes, whereas they are unknown there, but are abundant in Gilolo and Batchian; and exactly the same error is made with *Macropygia reinwardti*, which you will see in my collections, but not from Celebes. *Todiramphus funebris* is also unknown in Celebes, but common in Gilolo, so that the Dutch naturalists seem to have placed all their species of unknown locality in Celebes, acting as the French have done in giving to the little island of Vanikoro hundreds of insects which were never found there.

"Among the other interesting species from Gilolo are a *Ptilonopus* and a *Platycercus*—both, I think, new; the beautiful *Ianthœnas halmaheira*, Bp., and several fine aquatic birds and Waders.

"In a few days I commence work in Ceram, where I hope to make a very fine collection, especially of *Psittacidæ*, the Lories of Ceram surpassing even those of New Guinea in variety and beauty. I live in hopes too of a new *Semioptera*, or some equally interesting form.

"I take every opportunity of purchasing live specimens of Parrots from the islands I may probably not visit, and hope to get most valuable materials for elucidating their distribution in the East, which is in the highest degree interesting. Between the *Lorius garrulus* of Gilolo and that of Batchian there is a constant difference in the size of the dorsal yellow patch: are they considered distinct species?

"The species of Ceram birds mentioned in Bonaparte's 'Conspectus' are very few: how is it, then, that it has such a name for fine birds? I know nothing fine from it, but the Lories, which are superb. However, I hope and believe it will produce some very fine things—new Pigeons, perhaps. The Cassowary is said to be abundant in Ceram, and to be the same as the New Guinea species. The *Tanysipteræ* are very puzzling: which is the true *T. dea*, Linn.? The Dorey and Ternate specimens seem almost identical, and in G. R. Gray's list, New Guinea specimens are put as *T. dea*. If so, then the larger white-tailed species found in Amboyna and Ceram is undescribed, and is perhaps the same as the white-tailed specimens from the Kaisa Islands, sent with my Batchian collections*. The *Carpophaga perspicillata* of Amboyna differs also from those of Gilolo and Batchian in the much lighter colour of the head. Now, I believe in all these cases, where the difference is *constant*, we must call them *distinct species*. A 'permanent local variety' is an absurdity and a contradiction; and, if we once admit it, we make species a matter of pure opinion, and shut the door to all uniformity of nomenclature."

To the Editor of 'The Ibis.'

Feb. 27, 1860.

Sir,—I wish to correct an error in my paper on Egyptian birds (Ibis, vol. i. p. 47), where I call the only species of Shrike I procured or saw in Egypt *Lanius excubitor*. I have since shown my specimen to Mr. H. B. Tristram, who declares that it is *Lanius dealbatus*, differing from his specimens from the Algerian Sahara only in having the white of the under parts less pure. I was unacquainted with *Lanius dealbatus* when I was in Egypt six years ago, and when I wrote the paper for 'The Ibis,' I had not my specimen by me; hence the mistake. I am surprised that Mr. Tristram found *Pterocles arenarius* and *P. alchata* so very unpalatable (Ibis, vol. ii. p. 70). This fact differs strikingly from my experience in Egypt of *Pterocles exustus* and *P. senegalensis*, which species we used to consider very good eating, the flesh of the thigh especially being peculiarly white and tender. However, our Dragoman was an artist of no ordinary culinary skill, which may perhaps in some degree account for the different opinion Mr. Tristram and I have formed of the esculent merits of the birds of the genus *Pterocles*.

Yours, &c.,

E. C. Taylor.

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* Mr. Gray has named the Havre Dorey bird *T. galatea* (P. Z. S. 1859, p. 154). That from Ternate must be the true *T. dea*, Ternate being the locality given for the *Alcedo dea* of the old authors. We believe that Mr. Gray refers the examples from Batchian and from the Kaisa islands to different species both undescribed.—Ed.

To the Editor of 'The Ibis.'

Sir,—I keep an ornithological eye on the south coast, and report to you one or two incidents of 1859.

Three nests of the Peregrine Falcon, *Falco peregrinus,* came under my notice,—one in the cliff near Seaford, and two at the back of the Isle of Wight. Four eggs were obtained at Freshwater, and both Falcon and Tiercel, alas! caught in one day. At Culver there were two young birds and the same number of addled eggs; but, strange to say, in addition, a partridge's (*Perdix cinerea*). I did not see this, but it was reported to me, as a fact, by two reliable and distinct witnesses. How can we account for this unusual circumstance? Probably the hen partridge, being on the point of laying, was carried off by the Peregrine, and the operation was terminated, and perhaps hurried by fright, in the situation found. It would have been curious if the Falcon had subsequently hatched the egg, though not very likely to happen, as she had, I suppose, done sitting at the time. Perhaps your experience can furnish a parallel instance.

The frightful storms of the first week in November last appear to have been, as usual, destructive to the *Laridæ,* but particularly to the Fork-tailed Petrels (*Procellaria leachii*); three specimens were found at or near Seaford—one, Nov. 3rd, by a beach-comber. I saw this in the meat; it was in moult, and had the new black down underneath; its plumage was shabby. Nov. 6th, another was captured alive; and the third, Nov. 8th, also living, by a coast-guard; the two first appeared to have been starved, but the last was in good condition. One was also picked up dead, Nov. 7th, at Eynesbury, near St. Neots, Huntingdonshire. The cause of this mortality, I take to be, the roughness of the sea, which prevents the Petrels from feeding; and when weak from fasting they try to shift their quarters; the wind then overpowers them, and they are dashed against cliffs and rocks. Frequently the plumage of specimens obtained in this manner is quite worn away by attrition, as if the birds had endeavoured to rise above some obstacle, and only succeeded after many efforts.

I am desirous to mention that on Nov. 14th a curious hybrid was taken near Brighton, in the common clap-nets used by bird-catchers. It was a cross between the Green Finch, *Fringilla chloris,* and the Brown Linnet, *Fringilla cannabina.* This remarkable bird had the large beak, legs, claws, and thick skull of a Green Finch, with the colours on the breast, back, and elsewhere of the Brown Linnet, forming together, to an ornithological eye, a most strange combination. The feathers of this hybrid were clean and perfect, showing no marks of confinement; nor indeed would these birds produce a cross in captivity.

I may take this opportunity of stating how entirely I concur with my friend Mr. Alfred Newton in his interesting article on *Turdus musicus,* when he says that British Ornithology is not exhausted; nay, more, though I am only too thankful for such works as have been so well written by Yarrell and others, I venture to assert that a complete History of British Birds is, like that of our country, still a desideratum; and the authors (for, that the History may be anything like satisfactory, they must be many) would have to imitate the patient observation of that accurate naturalist, the late Mr. Wolley.

Yours, &c.,

George Dawson Rowley.

Brighton, January 16th, 1860.

Several letters and a small box of birds' skins and eggs have been received from Mr. Edward Newton, now in the Mauritius; but, as yet, circumstances have prevented his turning his attention, as much as he could have wished, to the ornithology of that island. He announces the existence of a *second* Tropic-bird, *in addition to* the Red-tailed species (*Phaëton phœnicurus*) already known to frequent the adjacent seas. Among the skins sent home by Mr. Newton are specimens of *Tinnunculus punctatus, Collocalia francica, Oxynotus ferrugineus, Tchitrea borbonica, Zosterops borbonica,* and *Z. curvirostris, Turdus ourovang* (?), *Foudia madagascariensis* and *F. erythrocephala, Estrelda astrild, Serinus icterus,* and the cosmopolitan *Squatarola helvetica*! Of *Collocalia francica* he has likewise transmitted specimens of the sternum and trachea, which fully confirm the justice of the opinion in accordance with which that genus has lately been classed among the *Cypselidæ* rather than the *Hirundinidæ* [*]. We forbear, at present, to quote any of Mr. Newton's notes respecting these birds, in the hope that before many months are passed he will be able to furnish a more complete account of their habits.

Mr. W. H. Simpson's last letters from Greece, dated Ætolia, Feb. 29th, announce the taking of a nest of Bonelli's Eagle (*Aquila bonellii*) and of some eggs of *Pelicanus crispus*, concerning which he promises further particulars. Mr. Simpson hopes to be able to pass the spring in the Dobrudscha, which is said to offer an excellent and almost unexplored field for the naturalist.

The Zoological Society of London have just received in their Gardens in the Regent's Park two living examples of the celebrated Shoe-bird or Whale-headed Stork (*Balæniceps rex*). These birds were reared by Mr. John Petherick, H.B.M. Consul for the Sudan at Khartoum, from eggs obtained on the Bahr el Gazâl and hatched under hens of the domestic fowl. One of them is a strong bird, and likely to do well; the other (a younger specimen) is, we fear, rather weakly. Two examples of the splendid Stork, *Mycteria ephippiorhyncha*, as well as other individuals of the genus *Balæniceps* were lost during the long journey from Khartoum to London.

Mr. S. Stevens of 24 Bloomsbury Street, has at present on sale a series of birds collected at Smyrna and its vicinity by M. J. G. von Gonzenbach, amongst which are fine examples of *Gypaëtus barbatus, Buteo leucurus, Accipiter sphenurus, Sitta syriaca, Garrulus melanocephalus*, and other interesting species.

With reference to the notes on *Buteo erythronotus* (p. 26) in our last Number, Mr. J. H. Gurney has called our attention to the fact that, according to the testimony of d'Orbigny, the "deep-red back" there spoken of as "characteristic of the adult" is assumed by the *female* only of this bird.

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[*] See 'Ibis,' 1859, p. 458.

THE IBIS.

No. VII. JULY 1860.

XXV.—*On Birds collected in the Colony of Natal, in South-Eastern Africa.* By John Henry Gurney, M.P., F.Z.S.

Having received from Mr. Thomas Ayres, of D'Urban, Natal, some additional specimens of birds from that locality, together with some further notes, I beg leave to communicate, for insertion in 'The Ibis,' the following list of species, with notices by Mr. Ayres, and with a few comments of my own, the latter being distinguished by brackets and initials. I begin with some additional remarks on species included in my former list ('Ibis,' vol. i. p. 234).

Sagittarius secretarius, Scop. Secretary Bird.

The stomach of the specimen sent contained lizards, locusts, small snakes, and a full-grown Red-breasted Lark. These birds well know how to use their long legs; they stalk along at a great pace. A terrier-dog which was with me at the time I shot this specimen gave chase to it; but the bird would run two or three hundred yards before it would trouble itself to rise, when it flew a short distance, and then ran on in front of the dog as before. Up-hill appears to make no difference in the speed of these birds.

Circaëtus thoracicus, Cuv. Black-breasted Harrier-Eagle.

The stomach of the specimen sent contained the remains of lizards, and of a poisonous snake, which could not have been less than 7 or 8 feet in length.

This snake is called by the Caffres "*Armarmbah.*" A favourite dog of ours, bitten last year by a snake of this species, died from the effects of the poison in less than an hour.

PERNIS APIVORUS, Linn. European Honey Pern.

The specimen sent is (like that in the previous collection) an adult male; the stomach contained wasps and crickets.

BUTEO JACKAL, Daud. Jackal Buzzard.

The stomach of the specimen sent contained the remains of frogs.

ACCIPITER TACHIRO, Daud. Tachiro Hawk.

The stomach of the specimen sent contained brown crickets.

ACCIPITER EXILIS, Temm. Red-bellied Hawk.

The stomach of the specimen sent contained the remains of small birds.

CIRCUS RANIVORUS, Daud. South-African Harrier.

The stomachs of the two specimens sent were filled with field-mice.

The flight of these specimens was heavy, and they alighted often; but at other times I have seen birds of this species on the wing for a great length of time, hunting backwards and forwards over a certain piece of ground, or a hill-side.

CAPRIMULGUS NATALENSIS, Smith. Natal Goatsucker.

The stomach of the specimen sent was full of large and hard beetles, swallowed whole. These birds roost on the ground amongst the grass; if disturbed, they fly a short distance and alight again; they feed only at night, and are fond of frequenting roads, or any other bare ground; they rise from the ground, and catch any beetle or insect that passes, immediately alighting again.

The flight of this Goatsucker is noiseless; its note is extremely liquid and mellow; it builds its nest in the grass, and lays two white eggs.

HALCYON FUSCICAPILLA, Lafr. Brown-hooded Kingfisher.

Male. Eye dark brown; bill crimson, black towards the tip; legs dark red. In its crop beetles and grasshoppers.

These birds frequent the bush, generally perching on some dead or bare bough, not far from the ground; they do not take their prey on the wing, but take it from the ground; they have a loud chattering note, somewhat similar to the "Laughing Jackass" (*Dacelo gigas*) of South Australia, but do not laugh in the same ludicrous manner; they have a dipping flight, seldom flying far at once.

INDICATOR MINOR, Stephens. Least Honey-Guide.

The stomach of the specimens sent was full of caterpillars. These birds have a long dipping flight, somewhat similar to the Emerald and Golden Cuckoos. One of them occasionally comes and perches close to our beehives, and takes the bees as they fly out and return home.

ARDEA CINEREA, Linn. Common British Heron.

Stomach of specimen sent contained an eel. These birds are generally in pairs; they are exceedingly shy; they often feed with the White Herons, and alight on trees.

HERODIAS FLAVIROSTRIS, Temm. African Yellow-billed White Heron.

Male and *female*. Eye, bill, and skin round the eye light yellow; legs, feet, and extreme tip of the upper mandible black.

The stomachs of these birds were crammed full of shrimps and small fishes.

These Herons are gregarious, frequenting the bays along the coast; they feed at low tide amongst the mud and shallow water, stalking gently along. When they see their prey, they stop suddenly, and make a dead point at it, exactly like a pointer dog at a partridge; remaining motionless for a few seconds, then gradually drawing nearer, they dart their long necks suddenly into the water, and almost invariably catch the unlucky fish. At high water, or if disturbed, and at night, they always perch on the upper boughs of the Mangroves, and other trees that fringe the bay, never roosting on the ground. Their flight is heavy, as is the flight of all the Herons that I know.

ARDETTA MINUTA, Linn. European Little Bittern.

Male. Stomach contained caterpillars and a quantity of frog-bones.

PODICA PETERSII, Hartlaub. Peters's Finfoot. Male and female.

In the *male,* the eye light reddish-brown; legs and feet bright red; upper mandible black, with red margins; under mandible red, with black margins. In the stomach frog-bones, and a quantity of bright transparent quartz-pebbles.

In the *female,* eye whitish-brown; legs bright red. In the stomach fish-bones and a few insects.

Both these birds were caught in traps set for Otters. They have the power of making an extraordinary noise, like the growling of a wild beast, which they do by drawing the air into their bodies and forcing it gradually from their throats. Both of these birds made this strange noise when taken from the traps, fighting at the same time with all their might. I have never seen two of these birds together.

[The female bird in this species is nearly one-third smaller than the male. Judging from the specimens which Mr. Ayres has now sent, I am disposed to think that it is only the male bird which assumes the dark lead-colour on the throat when in breeding-plumage.—J. H. G.]

The following are additional species, which I have numbered continuously with the previous list. In this, as in the former catalogue, a few species from other Natal collections have been included, for the sake of completing, as far as possible, particular groups.

65. GYPS RÜPPELLI, Bp. Rüppell's Griffon-Vulture.

Male and *female.* Eye nearly black; the colour of the skin of the neck of the male bird was greenish-white, that of the female black; bill, feet, and tarsi, also the skin over the eye, and round the base of the bill, black.

The first of these birds that we shot, we took to be an immature bird of *Gyps fulvus*; but a short time after, a flight of about thirty of them appeared and devoured an ox that had died close by. We managed to shoot three of them, two of which we now send; we then, of course, saw they were a different species. *Gyps fulvus* nearly always settles on the ground at some little distance from the beast off which they intend to make a meal;

but it appears to me that *Gyps rüppelli* prefers alighting on trees, if there are any near. In other respects these Vultures resemble *Gyps fulvus* in their habits, but I have not heard them make the unearthly noises over their food that *Gyps fulvus* does.

[With reference to the very dark colour of the eye in the specimens of *Gyps rüppelli* obtained by Mr. Ayres, it may be remarked that the colour of the irides in this species appears (according to the report of different observers) to be subject to considerable variation. Dr. Rüppell describes them as "white intermixed with serpentine fibre-like lines of brown;" Dr. Brehm as "silvery-grey," and Dr. Vierthaler as "yellowish-brown." Probably these variations may partly result from differences in age. The specimens sent by Mr. Ayres, I should suppose, from their plumage, to be birds of the second or third year.—J. H. G.]

66. Falco biarmicus, Temm. Latakoo Falcon.

Male, adult. Eye lightish brown; legs and skin round the eye bright yellow; cere and base of the bill bright yellow; centre of the bill slate-colour; tip black.

This bird is very rare here. It is exceedingly quick on the wing when in chase. The specimen sent descended from a great height, with a succession of rapid twists, but happened to come within shot before it reached the small birds which it was at the time pursuing.

Some time back two of these birds attacked a cat, which was hunting for rats on a bare field not far from the house, and fairly drove her away from their domain; the cat was obliged to stop every now and then to defend herself.

67. Nectarinia natalensis, Jardine. Natal Sun-bird.

Feeds principally on the nectar of flowers; will also eat the softer kinds of insects; generally hangs its nest on the outermost twigs of trees, at no great height from the earth, and very frequently over water.

68. Nectarinia afra, Linn. Greater Double-collared Sun-bird.

Habits and food much the same as those of *N. natalensis*.

69. Nectarinia amethystina, Shaw. Amethystine Sun-bird.

Habits and food the same as *N. natalensis*, but does not hang its nest over water.

70. Nectarinia collaris, Vieillot. Little Blue-banded Sun-bird.

These little birds are, I think, rather more insectivorous than the last three species, as I notice they climb about the creepers and thick foliage a good deal, hunting under the leaves and into buds for small insects; but they take the nectar from flowers in an equal degree. They build a pendulous nest, generally in some thick bush, hanging it from the leaves and outermost twigs. They are very fond of building in orange-trees, and others of equally dense foliage.

71. Drymoica melanorhyncha, Jardine. Black-billed Drymoica.

Builds among the stalks of high weeds.

72. Certhilauda africana, Gmel. Serli Lark.

73. Macronyx croceus, Vieill. Yellow-bellied Lark.

74. Macronyx capensis, Linn. Sentinel Lark.

75. Anthus gouldii, Fras. Gould's Pipit.

This species, and the three preceding ones, all nest on the ground amongst the high grass, frequently under a tuft of the same, and, like the Larks in England, take but little trouble with their nests.

76. Motacilla capensis, Linn. Cape of Good Hope Wagtail.

This species is fond of building its nest in a bunch of Bananas, or in the thick stem of the plant, where the leaves separate from the stem.

77. Pratincola rubicola, Linn. British Stone-Chat.

These birds appear to feed entirely on insects; they frequent principally marshy ground, always alighting on the tallest stem of rush or grass; they appear to be solitary, and I do not often see two together; they do not fly far without alighting; they sometimes take insects on the wing, but generally descend to the ground for them.

[The specimen sent appears to me to be identical with those found in Great Britain.—J. H. G.]

78. Saxicola pileata, Gmel. Imitative Wheatear.

Male. Eye dark brown. Feeds, I believe, entirely on insects; frequents the open country, and is generally to be found perched on mounds of earth formed by the white ants, and on stones, though it occasionally alights on low bushes. Its song much resembles that of the Lark in England; and it rises fluttering from the ground in the same manner, singing at the same time, and descending suddenly as the Lark does. It is not a numerous species about here.

79. Petrocincla rupestris, Vieill. South-African Rock-Thrush.

Frequents the same localities as the previous species. The stomach of the specimen sent contained some of the Cape Gooseberries, and some small stones.

80. Oriolus larvatus, Licht. Masked Oriole.

Male. Eye blood-red; bill and legs reddish-brown. Feeds principally on fruits and berries. Some of the notes of this bird are extremely liquid and mellow, others altogether as harsh. This species builds on the outermost boughs of trees, frequently over water, choosing a forked branch, and hanging the nest between them, in a very curious and ingenious way.

81. Pycnonotus nigricans, Vieill. Le Vaillant's Bulbul.

These birds live entirely on fruits and berries, and are very destructive in our garden, devouring indiscriminately Bananas, Loquats, Peaches, Papaws, Cape Gooseberries, and all other soft fruits. They are very numerous; they build generally in a fork of a tree, towards the top, and lay from three to five eggs. These birds often get intoxicated by eating fruit that is over-ripe and has undergone fermentation, more especially the Cape Gooseberry; and when in this drunken state are easily caught, as they can fly but a few yards at a time, and then not straight, soon tumbling to the ground. The berries of the Syringa trees have the same effect on them, as also the fruit of the Banyan Fig. Other birds that live on these fruits become intoxicated in the same way. If a hawk, or other bird of prey, makes its appearance, these Bulbuls immediately begin to chatter at a furious rate; and if he settle, a lot of them will frequently mob him; but the hawk, I have observed, takes no notice of them.

82. JUIDA PHŒNICOPTERA, Swainson. Flame-shouldered Juida.

Eye bright yellow; legs and bill black. These birds are generally to be found from three to a dozen together, sometimes more, excepting in the spring, when they pair off. They build in holes in the trunks of trees, generally at a good height from the ground. I have known a pair of these birds take possession of a Woodpecker's nest, destroying the eggs, and laying their own instead, which the Woodpeckers seemed rather tamely to submit to. They feed almost entirely on fruits and berries, and are destructive to our mulberries and other small fruits. They sometimes hop about and feed on the ground, somewhat like the Thrush and Blackbird in England.

83. PLATYSTEIRA PRIRIT, Vieill. Pririt Flycatcher.

[Mr. Ayres does not communicate any information respecting the habits of this Flycatcher.—J. H. G.]

84. DICRURUS MUSICUS, Vieill. Musical Drongo.

These birds generally build their nests on the outer branches of trees, about 20 or 30 feet from the ground, in a small fork, much exposed to wind and rain.

85. LANIUS COLLARIS, Linn. Fiscal Shrike.

This Shrike most frequently builds in a fork of a Mimosa or other low tree, but sometimes amongst shrubs and woody plants. It impales mice, small rats, lizards, chameleons, locusts, and other large insects, on the thorns of the bush on which it perches. It remains frequently for days on the same bush, making short excursions therefrom, hovering over its victim and darting down upon it, in a manner very similar to that of some of the birds of prey.

86. LANIARIUS QUADRICOLOR, Cassin. Four-coloured Shrike.

Male. Eye dark; legs slate-colour. Feeds entirely on insects. I do not think there is any difference in the plumage of the female from that of the male. These birds inhabit the dense bush along the coast, never leaving it; they creep about the underwood in search of their food, and are easily obtained by those who can imitate their call, for they will immediately answer, and come to the sportsman if within hearing; on perceiving their mistake, they make a low chirring noise, as they do also if they see a cat, snake, panther, or other beast of prey.

87. TELOPHONUS ERYTHROPTERUS, Shaw. Tchagra Shrike.

This species frequently builds amongst a mass of tangled creeping plants, merely placing the nests on or amongst them, either not at all adhering to them, or very slightly indeed.

88. CORVUS SCAPULATUS, Licht. White-necked Crow.

Eye dark brown; legs and bill black. These birds are not to be found nearer the coast than fifty or sixty miles. They seem to feed on anything they can pick up, such as ticks (*Acari*), bits of bone, berries and insects, and are fond of frequenting roads, in fact, are scarcely to be found elsewhere.

89. VIDUA AXILLARIS, Smith. Epauletted Widow-bird.

Male. The females of these birds are brown. They build amongst the tall grass, and lay from three to five eggs. I rather think the males lose their black plumage at one time of the year, but at that time they are not to be found in this part of the country. I think they go more to the north during the winter, coming this way to breed; in the spring they come in large flights, and pair off afterwards. In these flights there seem to be generally a far greater number of females than males, and I strongly suspect polygamy is much practised amongst them. They do a great deal of damage here, in the fields of oats and other corn (as do also the Maize-birds and other Finches). The males assume a very peculiar clapping flight during the breeding season, somewhat similar to the flight of the Lapwing in England.

90. VIDUA RUBRITORQUES, Swains. Red-throated Widow-bird.

Male. The females are brown. Habits very much the same as the preceding species, and, like it, does much damage amongst the corn-fields. The males have the long tail and black plumage only during the breeding-months. These birds build amongst the grass in the open country; they lay from two to four eggs. The nest is curiously built: they select a convenient tuft of grass, and interlace the blades as they stand, without breaking them off; so that the nest is green during the whole time of incubation, and is very beautiful when thus seen.

91. VIDUA ERYTHRORHYNCHA, Swains. Red-billed Widow-bird.

Male. Bill red; legs black. Feed entirely on grass seeds. These pretty birds have the long feathers in the tail during the summer months only, losing them in the winter. The female is brown, and never has the long feathers. I have never seen more than two or three of these birds together. The male of this species has a curious habit of hovering over his mate when she is feeding on the ground, bobbing up and down as you see the Mayflies and Midges do on a summer's evening in England. This exercise he generally continues for some minutes without resting.

[In the case of this and of the preceding species, I have used Mr. Swainson's specific names, as there seems to me to be some uncertainty with reference to the earlier synonyms.—J. H. G.]

92. PLOCEUS SPILONOTUS, Vig. Spotted-backed Weaver-bird.

These birds are gregarious; numbers build their nests on the same tree, generally an Acacia. I have seen as many as fifty or sixty nests on one tree, generally high, and frequently over pools of water; they hang their nests to the very outermost twigs, with their apertures downwards. The nests are made of strips of the leaf of the Palm-tree or Banana, which the birds tear off, and which resemble grass when woven in the nest; occasionally a small quantity of grass is mixed with the Palm-fibre. The best way to take these nests is to chop the tree down, or a limb from it. The eggs vary very much in colour; we scarcely find two nests with the same coloured eggs; green, blue, white, and speckled white and brown are the general colours. Each nest is always suspended by a single twig, unless two or three twigs are very close together. The extent of the black colouring on the heads and throats of the male birds varies very much, being often partially, and sometimes entirely wanting, and its place supplied with yellow. The females are always a dull olive-green.

93. Ploceus ocularius, Smith. Black-lored Weaver-bird.

This species sometimes hangs its nest on the end of a leaf of a tall Palm, and sometimes from the boughs of the Acacias in the dense bush—in some cases only a few feet from the ground, in others far out of reach.

94. Pyrenestes albifrons, Vigors. White-fronted Grosbeak.

[Mr. Ayres does not mention the habits of this species.—J. H. G.]

95. Hypochera ultramarina, Gmel. Blue-black Finch.

The specimen sent is the only one I have seen at Natal.

96. Fringillaria flaviventris, Vieill. Yellow-bellied Bunting.

Rare in Natal. Has a dipping flight; alights on the ground, as well as on trees; stomach contained seeds and small stones.

97. Colius striatus. Striated Coly.

This species builds in the thick fork of a Mimosa, or other low tree, well sheltered by creepers and foliage above.

98. Cuculus solitarius, Vieill. Solitary Cuckoo.

[Received by me out of a collection from Natal, but not sent by Mr. Ayres.—J. H. G.]

99. Campethera chrysura, Swains. Golden-tailed Woodpecker.

This Woodpecker makes a hole, for the purposes of incubation, in the trunk of a decayed tree, just large enough at the opening for the bird to enter, but becoming wider inside, and reaching downwards to a depth of a foot or 18 inches; it lays its eggs on the bare wood, without making any nest.

100. Columba arquatrix, Temm. Rameron Pigeon.

Male and *female*. Eye light yellow, as are also the bill and legs, and skin round the eye.

These fine birds are not to be found here all the year round, but come by thousands in the month of June, leaving again in August; they keep to the bush along the coast, only a few stragglers being found a few miles inland; they feed entirely on the berries which abound on the trees in the bush during the winter months, and are generally in good condition, and are the finest eating of all the Pigeons. The male specimen now sent weighed 17 oz. (the average weight of a number of these birds is 16 oz.). I have never seen them alight on the ground; they are shot here by hundreds, and afford our D'Urban sportsmen capital sport.

101. Columba trigonigera, Wagl. Roussard Pigeon.

[Mr. Ayres does not mention the habits of this Pigeon.—J. H. G.]

102. Turtur semitorquatus, Swains. Half-collared Turtle.

Female. Legs dark red.

These Doves are generally to be found in pairs, though I sometimes see half a dozen of them feeding together in the same field; they prefer cultivated ground, and are especially fond of buck-wheat; they are tame, and easily shot, as are most of the Doves and Pigeons here. These Doves build in the thick fork of a tree: the nest consists of a few twigs put so loosely together that it is a wonder that the young ones, of which they rear two, do not fall out.

[Mr. G. R. Gray, to whose kindness I am indebted for the identification of several species in this list, writes to me respecting the specimen of this Dove forwarded by Mr. Ayres as follows:—"It is very like *Turtur semitorquatus* of Swainson (Bonaparte's Conspectus, vol. ii. p. 64); and though it is smaller and rather richer in colour than any of the specimens of that species in the British Museum, yet I still consider it to belong to that species."—J. H. G.]

103. Peristera tympanistria, Temm. Tambourin Pigeon.

Builds in the thick fork of a low tree; a few coarse twigs compose the nest.

104. Francolinus natalensis, Smith. Natal Francolin.

Male and *female.* Eye dark brown; legs and feet red.

These birds live entirely in the dense underwood that abounds along the coast. Their food consists of insects and seeds; their call very much resembles that of the Guinea-fowl; they run exceedingly fast, and are shy and difficult to obtain; they roost in trees at night, and, when on the ground, will fly to them immediately, if chased by a dog, or in any other way suddenly disturbed—otherwise they run.

[The Natal Francolin is well described in Sir Andrew Smith's work on the Birds of South Africa; but the colouring of the plate is not equally accurate. The male bird is there mentioned as having only a single spur on each leg; in the male specimen sent by Mr. Ayres, there is a small rudimentary spur above the principal one on the right leg, but no corresponding second spur on the left leg; judging from the length of the ordinary spurs on both legs, it is probably an old bird, which may be the cause of this peculiarity.—J. H. G.]

105. FRANCOLINUS SUBTORQUATUS, Smith. Coqui Francolin.

Male and *female*. Eye dark; legs brownish-yellow; bill dark. In the crop of the female were insects and berries; that of the male was quite full of ants.

These birds live in the open country, and are generally dispersed all over the colony of Natal; they are to be found in coveys, like the Partridge in England; they roost on the ground in any convenient thick tuft of grass, and nestle all together.

These birds would be very numerous, were it not for the burning of the grass, together with the hawks, wild cats, and snakes which abound here, and are their mortal enemies.

[The female bird sent by Mr. Ayres agrees with the description and figure of this species given by Sir A. Smith, in his 'Birds of South Africa;' but the male which Mr. Ayres has sent differs in having the throat a pale rufous, instead of white, and in the total absence of the black crescent surrounding the throat and terminating above the base of the upper mandible, and also of the black line above the eye. Sir A. Smith says, "The female is without spurs to the tarsi; in other respects she exhibits a close resemblance to the male:" but, judging from the specimens sent by Mr. Ayres, I suspect that Sir A. Smith has figured and described as a male an old female bird, which, by reason of age, had acquired spurs resembling those of the male; and I am the more disposed to think this possible, as the same distinguished naturalist, in describing an allied species (*Francolinus levaillantii*), remarks, "In some specimens each sex has the tarsi armed with a spur; in others, that appendage is not found in either."—J. H. G.]

106. Coturnix dactylisonans, Temm. European Quail.

Male. Eye and bill dark brown; legs brownish-yellow.

A few of these birds are to be found here all the year round, nesting in the open country amongst the thick grass; but the greater part migrate here in large numbers during the autumn, in the months of April, May, and June, leaving again in the early spring. They live entirely on insects and small seeds, are extremely quick on the wing, and make a great noise when they rise with their wings, similar to the Partridge, also making a loud chirping noise as they fly away.

[The specimen sent, on comparison with English specimens, appears to be slightly smaller, but not otherwise to differ.—J. H. G.]

107. Turnix lepurana, Smith. South African Hemipode.

Male. Bill dark; legs brownish-yellow. Feeds on insects and seeds, principally the latter.

These beautiful little birds appear with the preceding species, but by no means in such numbers; the sportsman will seldom flush more than two at once of these, whilst of the others frequently ten or twelve will rise together.

108. Eupodotis caffra, Licht. Stanley Bustard.

Male. Eye light brown; legs whitish. In its stomach locusts and caterpillars.

I have found sometimes good-sized snakes and lizards in these birds. This specimen weighed 9 lbs. There are several kinds of Bustards here, but I have not yet been able to obtain them; they vary in weight from 3 or 4 up to 30 lbs.; and I believe there is one species in the Zulu country, frequenting the bush, which attains the weight of 40 lbs. The flesh of all the Bustards is excellent eating; they breed in the interior of the country, only coming towards the coast as the winter approaches;

they always prefer ground from which the grass has recently been burnt, to hunt for their food. They are exceedingly shy, and yet stupid; for although there is no cover, if the sportsman take a large circle round and round the bird, gradually nearing, the Bustard will frequently squat down with his head to the ground, thinking he will be passed unnoticed, when the sportsman may run up to within easy shooting distance.

109. ŒDICNEMUS MACULOSUS, Temm. Spotted Thick-knee.

Male and *female*. Eye bright yellow; legs yellow; dark along the front; bill yellow at the base, black towards the tip.

These birds feed, I believe, entirely on insects. They are very generally dispersed over the colony of Natal, appearing on the coast with the Bustards in the month of June. Like the Bustards, they will almost invariably try to hide themselves from the sportsman by crouching on the ground. When on the wing, the legs are extended straight out behind, similarly to the Herons.

110. CURSORIUS BURCHELLI, Swains. Burchell's Courser.

Male. Legs white; bill black. Contents of the stomach small beetles.

These birds are scarce here; they frequent the open country, and are to be found after the grass has been burnt off, when I have no doubt they more easily find their food. These birds run with extraordinary swiftness, much faster than any of the other kinds of Plovers here, notwithstanding their small size.

111. VANELLUS MELANOPTERUS, Rüpp. Black-winged Lapwing.

Male. Eye light yellow; legs and bill black.

Like the preceding species, this Plover feeds in the open country, and like it, is seldom to be found within ten or twelve miles from the coast. These birds have a loud harsh note, very similar to the Green Bee-eater here, and when on the wing they utter this note almost incessantly, more especially if they see a dog or other animal, when a lot of them will immediately fly towards the intruder, circling round and round within a few feet of it, seemingly with the intention of driving it away, which, with dogs, they generally succeed in effecting.

[In the 'Atlas' of Dr. Rüppell, the legs and feet of this species, and also the irides, are figured and described as red; in other respects the figure and description there given agree with the specimen and note forwarded by Mr. Ayres. Mr. Ayres's specimen appears to agree with '*Charadrius frontalis*' of Sundeval (Öfvers. 1850, p. 110), which is there described "*pedibus nigrofuscis*."

I think it probable, however, that this variation of colour in the legs and feet may be rather due to differences of age or sex, than to specific distinction, and the more so as the tibiæ in the specimen sent by Mr. Ayres appear to have been red when fresh, and as there is a specimen in the British Museum from the Cape of Good Hope in which the tarsi are red also, as represented in Dr. Rüppell's plate above referred to.—J. H. G.]

112. ÆGIALITES MARGINATUS, Vieill. Heywood's Ring-Dottrel.

Male. Eye dark brown. Stomach contained small pebbles and pieces of shell.

This species frequents the sea-shore, and runs with great swiftness.

113. ÆGIALITES HIATICULA, Linn. Common British Ring-Dottrel.

Eye dark brown; legs yellow. Only sand in the stomach.

This bird also lives on the coast, and is equally swift-footed with the preceding species.

114. TOTANUS GLOTTIS, Linn. Green-shank.

Male. Eye dark brown; legs and bill light slate-colour.

These birds are very shy, and are mostly gregarious, but sometimes solitary. They generally feed and intermix with the Curlews, frequently walking into the water till it reaches their bodies. The specimen sent seemed to have the remains of shrimps in the stomach.

115. NUMENIUS ARQUATA, Linn. Common European Curlew.

Female. Eye dark brown; legs bluish. Stomach empty, except a piece of shell.

There are great numbers of these birds in the Bay of Natal; and I think there are two or three species, as they vary much in size. They are exceedingly shy, and difficult to shoot; they are gregarious, and feed at low water on the mud-banks; they utter precisely the same note as the Curlew in England, and their habits appear to be the same.

116. GERONTICUS CALVUS, Bodd. South-African Bald Ibis.

Male and *female*. Top of the head bright red; bill and legs duller red; skin of the neck, and round the eye, greenish-white.

These birds feed entirely on insects, principally beetles. They frequent the open country, and are invariably to be found on land from which the grass has been burnt; they live principally inland, where they are very numerous, but gradually approach the coast during the winter months. I have not seen them nearer the sea than eight or ten miles; they are exceedingly wary, and it is a difficult matter to get within shot of them, as they generally prefer the bare open plains, without cover, to feed on; they walk about very fast, and are constantly on the move from morning till night. I imagine they must eat a great quantity of food, for they are always in search of it—not resting now and then, as all reasonable birds do; they seem to have no time at all for amusement.

[In Steedman's 'Wanderings in South Africa,' vol. i. pp. 144 & 174, this Ibis is said to nest in companies, in clefts in the rocky sides of precipitous mountains—a situation similar to that selected for nidification by its more northern congener, *Geronticus comatus*. *Vide* Rev. H. B. Tristram's paper in 'Ibis,' vol. ii. p. 78.—J. H. G.]

117. THRESKIORNIS ÆTHIOPICUS (Lath.). Sacred Ibis.

Male. Eye dark brown; legs, bill, and skin of the throat black. Stomach contained a quantity of small crabs and cowries.

These birds frequent the Bay of Natal and the mouths of the rivers along the coast. They are very shy. They feed with the Curlews at low water on the mud-banks; but where they roost I do not know, though I have seen them sometimes sunning themselves on the upper boughs of the Mangroves, together with Spoonbills, White Herons, &c. In their flight they usually form some figure, similarly to the Pelicans, Swans, Geese, &c.

[In my list of a collection of birds from Ibadan, inserted in the 'Ibis,' vol. i. p. 152, I included this species under Savigny's specific name of "*religiosus*;" but as I believe that "*æthiopicus*" is a prior synonym, I have here adopted it for that reason. —J. H. G.]

118. Ciconia alba, Briss. White Stork.

[In a collection from Natal, but not sent by Mr. Ayres.—J. H. G.]

119. Ardea goliath, Temm. Goliath Heron.

Male. Eye bright yellow.

These birds frequent the mouths of the rivers and the bays along the coast. They feed entirely upon fish, easily swallowing those which weigh half a pound, or even more. They wade about up to their bodies, and dart on the fish as they swim past. The Bay of Natal affords fine fishing-ground for these birds, being three miles in diameter,—the greater part shallow, with a muddy bottom, and myriads of fish entering with the tide. These Herons when gorged retire amongst the Mangroves to digest their meal, not roosting on the trees, but on the ground. They appear to be very solitary birds; I have seldom seen two together. The specimen sent measured, when in the flesh, upwards of six feet from the bill to the toes.

120. Ardea atricollis, Wagl. Black-throated Heron.

Female. Eye light yellow; legs and feet black; upper mandible black; under mandible greenish-yellow, as also was the skin round the eye. The contents of the stomach were lizards, locusts, a snake about two feet long, and a large rat—all swallowed whole, and quite fresh.

This bird was shot in a marshy valley about a mile from the coast, and is the only one of the kind I have seen.

121. Ardea purpurea, Linn. Purple Heron.

Female. Immature; eye light yellow.

In the stomach were some good-sized fish. This species frequents streams and marshes.

[A pair of Purple Herons, which I had in confinement some years since, were observed to catch rats when they had the opportunity, and to swallow them whole with great avidity. The specimen sent by Mr. Ayres appears to me to be identical with European examples.—J. H. G.]

122. HERODIAS GARZETTA, Linn. Little Egret.

Male. Eye light yellow; upper mandible black, under mandible lightish [but black on the sides towards the tip.—J. H. G.]; legs black, with a few green spots about them; feet pale green. Stomach contained a quantity of small fish. This species frequents the Bay of Natal.

123. BUPHUS COMATUS, Pall. Squacco Dwarf-Heron.

The only specimen I have seen. Eye and bill greenish-yellow; ridge of the upper mandible dark; legs pale green. Stomach contained grasshoppers and beetles.

124. ARDETTA GUTTURALIS, Smith. Guttural Dwarf-Bittern.

Male. Eye reddish-yellow; legs and bill greenish-yellow; ridge of the upper mandible dark brown. Stomach contained a few insects.

I believe that both this species, and also *Ardetta minuta*, feed entirely at night, generally hiding themselves in the reeds in the day, and coming out to feed at dusk.

[I am inclined to think that this species is identical with *Ardetta sturmii* of West Africa; but I have not seen sufficient specimens to express a positive opinion on the point.—J. H. G.]

125. PARRA CAPENSIS, Smith. Cape of Good Hope Jacana.

[Sent from Natal, but not by Mr. Ayres.—J. H. G.]

126. LARUS PŒOCEPHALUS, Swains. Grey-headed Gull.

Male and *female.* Eye greenish-white; legs, feet, bill, and eyelids blood-red; claws black. Contents of stomach, shrimps.

These Gulls frequent the Bay of Natal, frequently alighting on stakes or dead branches of trees that may be above the water. They do not appear to be gregarious.

127. STERNA VELOX, Rüpp. Rüppell's Tern.

Male. Eye dark; legs black.

These Terns frequent the Bay of Natal, generally in pairs, but sometimes as many as five or six together. When in search of food, they hover over the water and dart down on fish. Like the preceding species, they alight on any branch or piece of wood that may be above the water.

XXVI.—*On Birds collected or observed in the Republic of Honduras, with a short Account of a Journey across that country from the Pacific to the Atlantic Ocean.* (Part III.) By GEORGE CAVENDISH TAYLOR, F.R.G.S.

[Continued from page 122.]

54. TURKEY VULTURE. (*Cathartes aura.*)

This Vulture is common in Honduras. It does not, however, go much into the towns and villages, but is usually seen in the outskirts and in the forest. It is the only species found in Jamaica; and in Kingston is always to be seen sitting on the roofs of the houses, or feeding on carrion in the streets near the edge of the harbour. I have frequently been awakened early in the morning by the noise made by their feet on the shingles covering the roof of the house over my head. While residing in Kingston, I used often to puzzle the Vultures by throwing dried bird-skins stuffed with cotton out upon an adjacent roof. Few seconds would elapse before a Vulture would pounce down upon it; and it was curious to observe its manifest disappointment at finding nothing to eat in a skin of so natural and promising an appearance. I once wrapped the carcase of a bird I had skinned in a piece of paper, and threw it into the top of a thickly-leaved tree, just opposite to my window. It lodged in the upper branches; and being partially concealed from above by the leaves, it remained there for a long time. Frequently the Vultures would sweep within a few feet of it, almost brushing the leaves of the tree with their wings. Their sense of smell informed them that there was something eatable close by; but it is not surprising that their sight failed to solve the difficulty, as Vultures are not accustomed to have their food done up in paper like packets of sandwiches. Such carcases as I threw out of the window on the ground were seized upon by them immediately. They would dart down from the neighbouring roofs like pigeons do when grain is thrown for them.

55. BLACK VULTURE. (*Cathartes atratus.*)

This Vulture is very abundant in Honduras, and, while the last species chiefly inhabits the forest, this is always to be seen in the villages, sitting on the roofs of the houses, wheeling in flocks high up in the air, or feeding on filth and offal in the streets. These birds are so tame that one might at times kill them with a stick. I have seen thirty or forty of them together feeding on a carcase, and have approached within a few feet without disturbing them. This Vulture is also very common in Charleston, South Carolina, where I have seen them in numbers, hopping on the butchers' stalls in the market, and picking up bits of meat. They abound in all parts of Central America that I have visited, and are fond of sitting on the houses, or on trees, with their wings expanded to the warmth of the sun. Wilson's account of this, and the preceding species, is very good and accurate, and cannot be improved upon.

56. Caracara Eagle. (*Polyborus tharus.*)

Is very common, and generally seen singly or in pairs; is tame, and easily shot. They are very low-caste birds, and feed on carrion, offal, &c. One I shot was at the time engaged in scratching among some half-dried cow-dung.

57. Crested Spizaëtus. (*Spizaëtus ornatus.*)

I only saw this bird on one occasion, in the depth of the forest between Potrerillos and San Pedro. It was perched on the branch of a lofty tree, and I shot it with ease*.

58. Curassow Hawk. (*Ibycter americanus.*)

The only time I observed this species was at Taulevi, where I met with five or six together; but Mr. Edwards saw others after my departure from the country. As this bird has no English name that I am aware of, I call it the 'Curassow Hawk,' from its resemblance to the Curassows, and to commemorate the following adventure:—While at Taulevi, I was out in the evening with my gun, and was returning home with a male *Trogon melanocephalus,* which I had shot, when I met Mr. Edwards, who pointed out to me some large birds sitting on a tree overhanging a Plantain patch, which he said were Curassows. There were five of them; and they certainly did look like Curassows in flight and general appearance. The Plantain patch was thickly overgrown with long grass and weeds; but on I went, regardless of probable snakes, and certain swarms of agarrapatas, although I had been particularly careful all day not to go where I was likely to carry any off. As for the Trogon, I threw it away in contempt, having so much finer game in view. The Curassows, I considered, would amply repay me for a sleepless night, endless scratching, and consequent sores. So I stalked up to them, and shot one, while the others flew off to a not very distant tree. From their flight, cries, and general appearance, I still thought they were Curassows. The bird I had killed fell into a dense thicket, across a stream. Could I only have got at it, I should have been spared additional agarrapatas and disappointment. However, not stopping to pick up the dead one, I followed the others across the Plantain patch, then forced my way through an Aloe fence, which presented a perfect *chevaux de frise* of spikes, and succeeded in shooting three out of the remaining four. I now felt proud of what I had done, and of how well I had provided for our pot, which was in want of supplies at the time. Edwards, who had been watching me, went to pick them up. As he took hold of the first, he said, "This is a Hawk!"—and Hawks they all were, sure enough, to my great disgust and disappointment. When dead, they still much resembled Curassows, but were Hawks nevertheless—nothing but great, black, stinking, red-legged Hawks. However, I was not disappointed in agarrapatas, for I went home well stocked with them, and in no pleasant humour at having little or nothing to repay me for the discomfort I had to undergo.

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* In the list of Mr. Taylor's collection, given in 'Proc. Zool. Soc.' 1858 (p. 356), this *Spizaëtus* was wrongly named, having been referred to *S. tyrannus,* which latter species, however, does likewise occur in Central America.—Ed.

The specimens of *Ibycter americanus* in the British Museum are badly stuffed, and set up in an unnatural attitude. They give a very incorrect idea of the appearance of the bird when alive, or recently killed. One specimen which I shot measured 23½ inches in length, and 45 inches in extent across the wings. The irides were orange colour; legs and feet dark orange; claws black; eyelids deep orange colour; beak yellow; cere light leaden blue; base of beak and chin nearly bare of feathers, and deep orange in colour; legs feathered a little below the knee; tail long and rounded; wings rounded, fifth feather longest; the whole plumage greenish-black, except the lower part of breast, belly, and thighs, which parts were pure white. When alive, the red on the head and the white of the under parts are most conspicuous.

59. LARGE GREY HAWK. (*Asturina nitida* ?)

Appears to be common. When I was at Comayagua in January, I saw a pair making their nest in the top of a lofty cotton-tree. One I shot in Tigre Island measured 16¼ inches in length, and 34 inches in extent. Legs and feet yellow; beak black; cere yellow; head brownish-grey; upper surface of body brownish; under parts barred with brown and white; tail-feathers black, edged with white; two cross-bars of white on the tail; fourth feather of the wing the longest.

60. RED-WINGED HAWK. (*Asturina magnirostris.*)

After leaving Comayagua for the Atlantic coast, I found this bird abundant; but I did not observe it on the Pacific slope. I was unable to preserve a skin, as I had many other birds on hand which I considered of more importance. One I shot measured 15 inches in length, and 30 inches in extent. Upper surface of head and body greyish-brown; under surface and rump barred with red-brown and white; tail feathers greyish-brown, with four black bars; primaries red, barred with black, black at the tips. The red is very conspicuous when the wing is expanded, and is the most remarkable feature in the bird's plumage. Fourth and fifth primaries of the same length, and longest in the wing.

61. BROWN HAWK. (*Micrastur brachypterus*, Temm. ?)

This species also I first observed on the Atlantic or northern slope of the range of mountains which traverses Central America. It did not seem to be common.

Length 15½ inches; extent 33½ inches. Top of head dark brown, showing a good deal of white on the occiput; whole upper surface of body dark brown; feathers barred with white at their bases; chin whitish; neck, throat, and upper part of breast spotted brown and white; belly, under tail-coverts, and thighs dirty white, the latter barred with red-brown; primaries with outer edge and tip dark brown; inner edge white, barred with dark brown; fourth primary longest; tail-feathers black, with three broad bars of white; legs feathered to the knees.

62. AMERICAN KESTREL. (*Tinnunculus sparverius.*)

Very abundant, and so tame that it may frequently be approached within a few feet.

63. LITTLE OWL. (*Glaucidium infuscatum.*)

I never observed this species myself; but Mr. Edwards obtained several specimens after I had left the country. He shot one near Comayagua while in the act of eating a small lizard.

64. SCOPS OWL. (*Scops* —— ?)

I found this bird tolerably abundant in Tigre Island, but did not observe it anywhere else.

The preceding are all the *Raptores* I shot in Honduras. I saw some very large powerful Hawks, apparently of a light colour below, with dark heads, soaring at a considerable height, near San Pedro. A large Hawk of a dark lead-colour was frequently seen, possibly *Buteo æquinoctialis.* This last species was generally sitting perfectly still on the branch of a tree. Having no spare time to skin so large a bird, I did not even shoot a specimen, which I might easily have done, as they were tame, like most of the birds in the country, owing to their being so seldom molested. On two or three occasions I saw what appeared to be very small Falcons with light-coloured breasts—smaller than *Tinnunculus sparverius.* I shot twice at them when sitting on the top of very lofty trees; but owing to their small size, and the great distance, I was not able to obtain a specimen. I never saw an Osprey (*Pandion*) in Honduras; but when I was on board a steamer, on the south coast of Cuba, going from Cienfuegos to Batavano, an Osprey alighted on the mast-head, and was shot by one of the passengers. It was a very fine specimen.

65. RED PIGEON. (*Columba flavirostris.*)

Not uncommon on Tigre Island; but I did not notice it in the interior. They are fine handsome birds. Length 13 inches. Bill white; cere reddish; irides yellowish-brown; head, neck, and breast pale claret colour; chin whitish; back and wings brownish-grey; belly and rump bluish-grey; a patch of the same colour as the neck on each shoulder; tail-feathers darker than wings; legs and feet dark pink.

66. White-winged Dove. (*Zenaida leucoptera.*)

Abundant; especially near the Pacific coast, and in the environs of Comayagua. I found this species most plentiful in the vicinity of houses and corn-fields; the following species seemed to prefer the woods and open plains. Both are very good eating, and I used often to kill two or three at a shot. I found all the *Columbidæ* most abundant on the Pacific slope, which is drier and more rocky than the Atlantic; the vegetation moreover is not nearly so dense, and there are fewer Palms, Ferns, and large trees. I observed very few Doves on the Atlantic slope, and hardly any as we approached the sea.

This species is common in Jamaica (see 'Gosse's Birds of Jamaica'). The time to shoot Pigeons was the morning and evening; during the heat of the day they keep close under the shade of thick bushes, and will not leave their shelter. I have tried to drive them out with stones, but they would only fly a few yards, and then dive into the thicket again. In the tropics I found that few birds, except Humming-birds, would face the sun, consequently morning and evening, especially the former, was the best time for bird-collecting. To go out in the heat of the day was useless, and a sacrifice of health and strength.

67. Sharp-tailed Brown Dove. (*Zenaidura carolinensis.*)

Common, and generally seen in small flocks of six to ten. (See preceding remarks.)

68. Short-tailed Ground Dove. (*Chamæpelia rufipennis.*)

I only saw this species in some open country near Comayagua, where they were not very plentiful.

69. Long-tailed Ground Dove. (*Scardafella inca.*)

Very common, and generally seen in pairs. They are good eating, but so small as not to be worth shooting for the pot in a country where ammunition is scarce, and a watch has to be set on its expenditure; they are very beautiful little birds. I am sorry that, with the exception of the last species, I was unable to preserve specimens of the *Columbidæ* of Honduras, owing to want of time and bad health. All Pigeons are difficult to prepare, as their feathers readily fall off, and their skins are tender and easily torn.

Length 8½ inches. Irides reddish; legs and feet pale flesh-colour; upper surface of body pale brown, each feather tipped with darker, forming transverse bars; chin and breast dove-colour, feathers tipped with darker; belly buff, feathers with darker tips; six outer tail-feathers black, with white tips; two next black, with basal part of the shaft red; centre feathers brown; wing-feathers rich chestnut-red, edged with blackish-brown.

[To be continued.]

XXVII.—*Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro.* By the Hon. THOMAS L. POWYS, F.Z.S. (Part III.)

[Continued from page 140.]

81. HEDGE SPARROW. (*Accentor modularis.*)

Very common in Corfu in winter. I have observed one or two individuals during the summer months, and seen some eggs (which I believe belonged to this species) taken in Epirus.

82. ROBIN REDBREAST. (*Sylvia rubecula.*)

Arrives in Corfu in great numbers about the end of October, and disappears in March. Not very abundant on the mainland.

83. BLUE-THROATED WARBLER. (*Sylvia cyanecula.*)

I only once saw a bird of this species in these parts; this was in the Val di Roppa, in Corfu, in April 1857.

84. COMMON REDSTART. (*Sylvia phœnicura.*)

Arrives in March in small numbers, remaining, I think, only a few days.

85. BLACK REDSTART. (*Sylvia tithys.*)

Common in Corfu and Epirus in winter. A few remain to breed in the island.

86. WHITE WAGTAIL. (*Motacilla alba.*)

Common, and resident in Corfu; I have not observed it on the mainland except during the winter months.

87. Grey Wagtail. (*Motacilla boarula.*)
Common in winter in Corfu and Epirus.

88. Grey-headed Wagtail. (*Motacilla cinereocapilla.*)
Arrives in great numbers in Corfu about the middle of April, at which season it is to be found in small flocks in all the low meadows and maize-fields of the island. I never could find a nest of this species, though I have observed a few pairs during the whole summer.

89. Black-headed Wagtail. (*Motacilla melanocephala.*)
Arrives with the above species, but in much smaller numbers, and only remains for a few days. The locality in which I have most frequently observed this bird was the marsh at the mouth of the Kataito river, near Butrinto in Epirus. They appear to be more arboreal in their habits than the other Wagtails, and have a very distinct and peculiar note. The Corfu bird-stuffer told me, on my showing him one of this species, that he had never before observed it, and insisted that it was only a variety of the above; but there are slight differences of habits, flights, &c., which at once distinguish it from that bird, were the plumage not at once sufficient to settle the question. To myself this species appears to resemble *Motacilla rayi* (which I have never observed in these parts) in all particulars more than any other of its congeners.

90. Rock Pipit. (*Anthus rupestris.*)
Common on the coasts of Epirus and Corfu.

91. Meadow Pipit. (*Anthus pratensis.*)
Very common in Corfu and Epirus in winter. A few are to be seen in the island at all seasons.

92. Tree Pipit. (*Anthus arboreus.*)
Not common. I have now and then observed it in Corfu during the winter.

93. Skylark. (*Alauda arvensis.*)
Common in Corfu and Epirus in winter.

94. Woodlark. (*Alauda arborea.*)
Common in winter in Corfu. A few remain to breed in the island.

95. CRESTED LARK. (*Galerida cristata.*)
Very common in all seasons in Corfu and Epirus.

96. CALANDRA LARK. (*Alauda calandra.*)
A few of this species are to be observed in summer in Corfu, where they breed. I have never observed this bird on the mainland.

97. SHORT-TOED LARK. (*Alauda brachydactyla.*)
Common in winter in Corfu and Epirus.

98. WHITE-NECKED FLYCATCHER. (*Muscicapa albicollis.*)
I observed several of these birds in May 1857 near Pelleka, in the island of Corfu.

99. SPOTTED FLYCATCHER. (*Muscicapa grisola.*)
Common in summer in Corfu and Epirus.

100. THRUSH WARBLER. (*Sylvia turdoides.*)
Common, and resident in Corfu and Epirus.

101. RUFOUS SEDGE WARBLER. (*Sylvia galactodes.*)
I twice observed this species in these parts; once in the island of Corfu, on which occasion a friend killed a fine specimen; and a few weeks afterwards near Kataito, in Epirus, where I watched a pair for some time, but refrained from shooting them, as my gun was loaded with large shot.

102. NIGHTINGALE. (*Sylvia luscinia.*)
Very common in Corfu and all parts of the mainland that I have visited during the summer; at Delvino especially, in May 1857, we could hardly sleep for the multitude of Nightingales that were singing on the banks of a little stream that ran under the windows of the house in which we lodged.

103. OLIVE-GROVE WARBLER. (*Sylvia olivetorum.*)
I shot one of this species near Corfu in April 1857, and have seen the skin of another from Zante.

104. COMMON WHITETHROAT. (*Sylvia cinerea.*)
I have occasionally observed this bird in Corfu in September and October.

105. **Lesser Whitethroat.** (*Sylvia curruca.*)

I shot one of this species in Corfu in September 1857. This is the only instance in which it came under my notice in these parts.

106. **Subalpine Warbler.** (*Sylvia subalpina.*)

A beautiful specimen of this pretty little bird was brought to me by one of my yacht's crew, who had picked it up close to the lighthouse of Santa Maura, on the 24th of March, 1857. I have occasionally noticed this species in Epirus in February and March.

107. **Black-headed Warbler.** (*Sylvia melanocephala.*)

Very common, and resident in Corfu and Epirus. I have found the nest of this species on the citadel rock of Corfu.

108. **Orphean Warbler.** (*Sylvia orphea.*)

Occasionally seen in spring, but decidedly not common in Corfu.

109. **Garden Warbler.** (*Sylvia hortensis.*)

I found a nest of this bird, containing eggs, near Khimàra in Epirus, in May 1857. I do not remember to have noticed it in these parts on any other occasion.

110. **Willow Wren.** (*Phylloscopus trochilus.*)

I have occasionally seen this species in winter in the gardens in the vicinity of Corfu.

111. **Chiff-Chaff.** (*Phylloscopus rufus.*)

Common in Epirus in spring and summer. I have occasionally heard it in sunny weather in December.

112. **Wood Wren.** (*Phylloscopus sibilatrix.*)

I picked up one of this species on the beach near Govino, in the island of Corfu, in March 1857. It is decidedly far from common in Corfu and Epirus.

113. **Southern Willow Wren ?**

I have often seen, and once or twice killed, a Willow Wren in Epirus in winter, which I believe to be the *Hypolais salicaria* of Brehm. It certainly does not belong to any of the three preceding species. I always found a few of these birds among the tamarisks at the mouth of the Kataito river in Epirus, in December and January.

114. Aquatic Warbler. (*Calamodyta aquatica.*)

This species is to be found in considerable numbers, for a few days about the beginning of May, on the banks of a reedy pond near Govino, about seven miles from Corfu. I never noticed it in any other locality, either in Corfu or on the mainland; but from the 2nd and 3rd till the 8th or 10th of May, 1857 and 1858, in the above-mentioned spot, it was very abundant. I could not observe a single individual after the 10th instant in either year, and searched in vain for their nest. This species is very common at Nice in August and September.

115. Cetti's Warbler. (*Calamodyta cetti.*)

This species occurs sparingly in Corfu in April. I do not think that it remains to breed.

116. Fantail Warbler. (*Calamodyta cisticola.*)

Very common, and resident in Corfu and Epirus.

117. Reed Warbler. (*Calamodyta strepera.*)

Common in winter in Epirus and Acarnania.

118. Common Wren. (*Troglodytes europæus.*)

Common, and resident in Epirus. I have not noticed it in the island of Corfu, except during the winter.

119. Syrian Nuthatch. (*Sitta syriaca.*)

Common in certain suitable localities in Epirus, particularly amongst the stony and precipitous hills near Santa Quaranta, where I have frequently observed it in small parties of five or six, flitting about and busily examining the holes and crevices of the rocks. It is a lively and restless bird, and has a note entirely different from that of the Common Nuthatch (*Sitta cæsia*). I never observed this bird to perch on a tree or shrub, but almost invariably found them on the most exposed and barren hill-sides.

120. Great Titmouse. (*Parus major.*)

Occasionally seen in Corfu and Epirus in winter.

121. Marsh Titmouse. (*Parus palustris.*)

Common, and I believe resident in Epirus.

122. COLE TITMOUSE. (*Parus ater.*)
Occasionally seen in Corfu in winter.

123. BLUE TITMOUSE. (*Parus cæruleus.*)
Common, and resident in Corfu and Epirus.

124. LONG-TAILED TITMOUSE. (*Parus caudatus.*)
Common in winter in Epirus.

125. BEARDED TITMOUSE. (*Parus biarmicus.*)
I observed several of this species about the banks of the Lake of Scutari in Albania proper in August 1857.

126. PENDULINE TITMOUSE. (*Parus pendulinus.*)
Common in the great marshes at the mouth of the Acheron in Epirus in winter, and I believe resident there. It is curious, that, though I am acquainted with many apparently equally suitable haunts for this species in Epirus, the above is the only locality in that country in which I have ever seen or heard of it.

127. GOLDEN-CRESTED WREN. (*Regulus cristatus.*)
Common in the evergreen coverts of Epirus in winter.

128. DIPPER. (*Cinclus aquaticus.*)
Common on the mountain streams of Albania and Epirus.

129. GOLDEN ORIOLE. (*Oriolus galbula.*)
This species arrives in Corfu and Epirus about the middle of April, and is eagerly sought after by the '*cacciatori*' for the market. I think very few remain to breed in the island; but I have often observed them on the mainland in May and June. I always found it very difficult to get a shot at these birds; for immediately they discover that they are pursued, they ensconce themselves in the thickest covert at hand, and nothing will induce them to quit it. They have, besides the musical whistle from which they take their French, Italian, Spanish, and Greek name, a very peculiar guttural chatter, which I have often heard within a few yards, though I could not see the bird, or force it to take wing. In September they are very abundant in the gardens of Corfu, and are very fat, and delicious eating. I never could obtain an adult specimen at that season; though I have seen dozens hanging up in the market, they were all birds

of the year. I saw several of this species in Montenegro in August 1857.

130. House Swallow. (*Hirundo rustica.*)
Very common in summer in Corfu and Epirus.

131. Common Martin. (*Hirundo urbica.*)
Common in summer in Corfu and Epirus.

132. Sand Martin. (*Hirundo riparia.*)
Not very common in Epirus in summer.

133. Rock Swallow. (*Hirundo rupestris.*)
Common, and resident in Epirus, haunting the high and precipitous mountains of the interior in summer, and coming down to the coast during the winter months.

134. Common Swift. (*Cypselus apus.*)
Common in Corfu in summer, but less so than the next species.

135. Alpine Swift. (*Cypselus melba.*)
Arrives in May in great numbers in Corfu, and remains till the end of September. Several pairs breed annually in the citadel rock.

136. Cuckoo. (*Cuculus canorus.*)
Arrives in Corfu in small numbers in April, and remains a few days; occasionally seen on its return south in the early part of September. I once saw a Cuckoo on the mainland in July.

137. Black Woodpecker. (*Picus martius.*)
I saw two specimens of this Woodpecker at Santa Maura, which I was assured had been killed on the Black Mountain of Cephalonia. I caught a glimpse of a bird, which I believe to have been one of this species, in a wood near the mouth of the river Drin, in December 1857.

138. White-rumped Woodpecker. (*Picus leuconotus.*)
I killed two specimens of this bird in the woods about Butrinto, in the winter. It is not uncommon, but very wary, and difficult to shoot. Its note and general habits very much resemble those of *Picus major*.

139. Little Spotted Woodpecker. (*Picus minor.*)
Common in winter in the woods of Epirus.

140. Green Woodpecker. (*Gecinus viridis.*)
I saw a Green Woodpecker near the mouth of the Drin in December 1857. This is the only instance in which this species came under my observation in these parts.

141. Grey-headed Green Woodpecker. (*Gecinus canus.*)
I saw a fine specimen of this bird near Cettinje, in Montenegro, in August 1857; he settled on a tree close to me, and I watched him for several minutes, much regretting that I had not a gun.

142. Wryneck. (*Yunx torquilla.*)
Not very common. I only twice observed it in Epirus; the first time in the great marsh at Phanari, in March 1857, and again near Kinouria, at the head of the Lake of Butrinto, in December of the same year. On the first occasion I mistook it for *Sylvia nisoria,* and pursued it through dense thickets of Tamarisk, till at last I succeeded in shooting it, and was greatly disappointed when it turned out to be nothing but a "Cuckoo's mate."

143. Roller. (*Coracias garrula.*)
Arrives in great numbers in Corfu about the middle of April; it only remains for a few days in the island, but breeds on the mainland. I found a nest in the walls of a ruined house at Delvino, in May 1857. The birds had quite lost their usual timidity, and flew round my head chattering and screaming as I approached the nest, which I suspect was an old one of some other bird. This species is known to the *cacciatori* as '*Corvo marino,*' and among the Greek peasantry as *'Αλκοκορώνη.* I discovered another nest, in June 1857, in the banks of the Kataito River, near the village of Mursyah. In this instance, the nest was in a hole in the bank, and consisted of a few twigs, carelessly put together.

144. Common Bee-eater. (*Merops apiaster.*)
Arrives in Corfu and Epirus in great numbers in April, and breeds in the latter country on the banks of the Kataito River, near Mursyah, and many other similar localities. In all the

holes that we examined, the eggs were laid on the bare sand, without any attempt at a nest. I several times observed three, and once or twice four birds fly from the same hole. These birds leave the country as soon as the young are able to fly. I have never seen them later than the beginning of August. I observed also, in August 1858, on the banks of the Guadalquivir, near San Juan de Alfarache, where there is a large colony of this species, that, although the banks were mined in every direction, and exhibited signs of recent occupation, not a Bee-eater was to be seen.

145. COMMON KINGFISHER. (*Alcedo ispida.*)

Very abundant, and resident in Corfu and Epirus.

146. HOOPOE. (*Upupa epops.*)

Very common in summer in Epirus, arriving about the 20th March, and leaving the country in September. I do not think that the Hoopoe breeds in the island of Corfu, though it is common there in March and August. I once found a nest of this bird in Epirus on the ground, under a large boulder on a stony hill-side, but the usual site for it in that country appears to be the hole of a tree.

147. COMMON NIGHTJAR. (*Caprimulgus europæus.*)

Arrives in small numbers in Corfu and Epirus in April, but does not, I think, remain to breed. I found a small party of Nightjars at Pagania in September 1857.

148. RINGDOVE. (*Columba palumbus.*)

I noticed very large flocks of Wood-pigeons near Phanari, in the plains through which the Acheron runs. This was in March 1857. I have occasionally seen a few in different parts of Epirus during the winter months, but it is not abundant in that province. I never saw it in Corfu.

149. STOCK-DOVE. (*Columba œnas.*)

Common about the shores of the Gulf of Arta in March 1857. I have seen single birds at all seasons of the year near Butrinto and Kataito, and once or twice in the island of Corfu.

150. ROCK-DOVE. (*Columba livia.*)

Very common, and resident on the coasts of Albania, Epirus, and Corfu. Near the mouth of the river Kalamo these birds breed on the bare rocks, after the manner of some of the Gulls. On the peninsula of Pagania there is a curious natural pit, some 60 or 70 feet in depth, frequented by this species in great numbers. In this, my servant (who was once lowered into it by a rope, for the purpose of forcing out the doves) had an encounter with a wild cat, which at last retreated into a side gallery and was lost sight of. On throwing stones down this pit, a dozen or two of Doves, Blue Thrushes, Blackbirds, Little Owls, and Nuthatches (*Sitta syriaca*) would often dash out in confusion, with now and then a large Bat; and on one occasion a Peregrine Falcon. There are small colonies of Rock-doves in many parts of the coast of the island of Corfu, particularly at Paleocastrizza and near Porto Serpente.

151. TURTLE-DOVE. (*Columba turtur.*)

Arrives in Corfu and Epirus early in April in great numbers, and remains to breed, disappearing about the end of August.

152. COMMON PHEASANT. (*Phasianus colchicus.*)

The only localities in which I have myself seen Pheasants in these parts, were, once on the Luro River, near Prevesa, in March 1857, on which occasion I only saw one, the bird having never previously been met with in that part of the country; and again, in December of the same year, in the forests near the mouth of the river Drin, in Albania, where it is comparatively common, and where several fell to our guns. In this latter locality, the Pheasant's habitat seems to be confined to a radius of from twenty to thirty miles to the north, east, and south of the town of Alessio,—a district for the most part densely wooded, and well watered, with occasional tracts of cultivated ground, Indian Corn being apparently the principal produce, and forming, with the berries of the Privet (which abounds throughout Albania), the chief food of the present species. We heard many more Pheasants than we saw, as the woods were thick and of great extent, our dogs wild, and we lost a great deal of time in making circuits to cross or avoid the numerous small but deep streams which intersect the country in every direction. This species is particularly abundant on the shores of the Gulf of

Salonica, about the mouth of the river Vardar; and I have been informed, on good authority, that Pheasants are also to be found in the woods of Vhrakori in Ætolia, about midway between the Gulfs of Lepanto and Arta.

153. GREEK PARTRIDGE. (*Perdix græca.*)

This is the Common Partridge of Epirus and the Ionian Islands; it is not very abundant in Corfu, where it is only to be met with on the ridge of San Salvador. The Greek Partridge haunts the stony hill-sides,—never, as far as my own observation goes, descending to the plain. It is not easy to make a good bag of these birds, even in localities where they are numerous, as the coveys disperse on being disturbed; and on alighting, each bird takes a line of its own, and sets off running to the nearest covert, which in these parts generally consists of thick evergreen scrub, from which it is very difficult to flush them. In the Ionian Islands they are most abundant in Cephalonia, Santa Maura, Kalamo, Petala, Arkudi, and Meganisi. The flesh of this species is, to my taste, far superior to that of either of its congeners, *P. rubra* or *P. petrosa.*

154. GREY PARTRIDGE. (*Perdix cinerea.*)

This species is common in the cultivated plains of Albania proper, in which provinces I have seen and shot it near Antivari. In Epirus it is found in considerable numbers near Joannina, and in the plains of Arta. I have also heard of its occurrence in the neighbourhood of Avlona, about eighty miles north of the island of Corfu.

155. QUAIL. (*Coturnix vulgaris.*)

A few Quails remain the whole year in Corfu and Epirus; but great numbers arrive every year in April, and remain for a few days. On the little island of Fano especially, they sometimes at that season alight in incredible numbers, often only remaining a single night. I have occasionally met with good sport at Quails in the maize-fields of Epirus in September; these were chiefly young birds that had been bred in the country. A few are always to be found in winter on the grassy hills of the mainland opposite to Corfu, particularly on those near the little harbour of Pagania.

156. Pin-tailed Sand-Grouse. (*Pterodes alchata.*)

Three of this species flew across our bows towards the east, as I was going from Corfu to Malta, on board H.M.S. Coquette, on the 1st August, 1858. We had just sighted Sicily when they passed us. I have never seen or heard of the occurrence of Sand-grouse in any part of Greece or European Turkey.

157. Great Bustard. (*Otis tarda.*)

A Great Bustard flew over my head one day in February 1858, as I was chasing Grebes in the Bay of Butrinto. This is the only occasion on which I saw this species in these parts; but I was shown some of the feathers of one which had been killed in Acarnania in March 1857; and in the following winter several were killed near Cape Papas, in the Morea, where they are not uncommon. Great numbers were brought into Athens in January 1858. The Great Bustard breeds in the Morea, in the vicinity of Tripolitza.

158. Little Bustard. (*Otis tetrax.*)

I saw a Little Bustard in the island of Corfu in December 1856, and two more near Livitazza in Epirus in March 1858. It is far from common in these parts. I only saw one freshly killed specimen during my stay amongst Greek seas, which was shot at Livitazza in January 1857, by an officer of the garrison of Corfu. The bird-stuffer had never before seen a specimen.

159. Common Pratincole. (*Glareola pratincola.*)

Arrives in Corfu and Epirus in considerable numbers in April, and remains a few weeks in the country. I have found that, though these birds are not easy to approach by walking straight at them, they will squat, if one makes a circuit round them, gradually lessening the distance, and will allow themselves to be nearly trodden upon before taking wing. Large numbers frequent the race-course at Corfu in April. The Corfiote name for this species is "*Pernice di mare.*" The food of the Pratincole appears to consist almost exclusively of various species of beetles.

XXVIII.—*On the Habits of the Swallow-tailed Kite* (Elanoides furcatus) *in Guatemala.* By Robert Owen, C.M.Z.S.

These imperfect notes on the Swallow-tailed Kite, being the result of personal observation, may (as I believe little is known of the habits of this species) prove to be of some interest to the readers of the 'Ibis.' It appears to me, however, indispensable to diverge somewhat at first, so as to give some idea of the locality where I made my observations, and of the character of the country by which I was surrounded. I had passed several weeks at Coban (Alta Vera Paz), engaged in a variety of occupations; such as puzzling out "*la lengua*," as the language of the Indians is termed, collecting birds' skins, and listening to the interminable tales of Indian life and adventure, in which some of the "Ladinos" (*i. e.* the mixed race of Spaniards and Indians) are so well versed. All the time I had been constant in rapid perambulations to keep myself warm. To hurry along at the pace adopted to get up a reaction after emerging from the clammy folds of the "wet sheet" at an hydropathic institution, may seem a strange proceeding in the tropics; but it must be borne in mind that Coban is essentially a '*tierra fria*,' and that during the '*temporales*' (the term applied to a succession of dull rainy days), which are of pretty frequent occurrence, one feels as damp and miserable there as in a wet November day in England. During the whole of my stay at Coban the sun had only shone brightly a few times; so, having given up all hopes of fine weather, I ordered my mules to be saddled, Indians to be looked up to carry my baggage, and resolved to make the best of my way towards San Gerónimo.

The first day's journey brought me to Tac-tic, an Indian town about eight leagues from Coban. One end of a rancho was placed at my disposal, with much ceremony and profound genuflexions, by its owners—a dusky party of the fair sex—whose hospitality I solicited. It contained a dilapidated four-poster of the country; a table in the last stage of decay, with a decided tendency to launch the wooden image which was upon it headforemost into the middle of the hut; and, lastly, an indescribable piece of furniture, of which a large party of fowls availed themselves as a roosting-place for the night. In spite of their incessant squabbling and the hardness of my pillow (on this occasion my saddle), morning came quickly, and at an early hour I took leave of my hostess, who, with the greatest appearance of sincerity, placed herself, family, rancho, and all her earthly goods at my disposal for any future occasion.

This style of displaying such tender and extreme regard for the convenience of their fellow-creatures is common throughout the country, and is a mere ceremony, nothing being farther from their wishes than that the traveller should avail himself of their empty offers. We parted with mutual protestations of eternal friendship. The sun was rising, and numbers of Cha-chas (*Ortalida vetula*) were seen on all sides fluttering through the bush. This seems to be a favourite place for the Cha-cha, it being met with in large numbers, which almost deafen one with their noisy concert. One bird leads off with a few chirps, the rest then join in gradually and with increasing vigour, flitting about in the meanwhile from bush to bush. The noise having reached its climax is deafening in the extreme, but dies down gradually, until only a few chirps are heard, and soon all is silent as before.

The character of the country here, as at Coban, is entirely different from every other part of the State of Guatemala which I have visited. Undulating hills, clothed to their summits with a profuse vegetation which has followed the demolition of the primæval forest, take the place of the towering and barren mountain-ranges which are characteristic of the district of Salamà and Rabinal. I should mention that a companion made the journey from Coban with me—a young man of the country, bred to mountain life, conversant with the language of the Indians, and enthusiastic in the extreme in everything connected with the pursuits of a naturalist. Proceeding on our journey, and passing over the brow of a hill which rose considerably above those surrounding us, we suddenly saw, on the slope beneath us, a large number of Swallow-tailed Kites (*Elanoides furcatus*), gliding backwards and forwards through the air, directly over the road which we were pursuing. They were near the ground, many of them within ten or twelve yards of it, and numbered from 150 to twice that quantity. They were closely packed, not one straggling for a moment from the rest, and reminded one of our English Swifts (*Cypselus apus*) as they congregate in flight round an old and lofty edifice. My companion was surprised, no less than myself, to find so many of these birds in company; for, according to the experience of the Coban hunters, they generally go in pairs, although three or four may be occasionally met with together. A few yards of precipitous descent brought us immediately under the birds, and into a swarm of bees upon which they were feeding. The swarm was slowly skirting the hill in compact order, its persecutors sweeping through and through it, with wings extended, and their scissor-like tails widely opened. Their flight was not at all rapid, but steady and powerful, no movement of the wings being perceptible. Our intrusion upon their feeding-ground did not cause them the slightest alarm. Not even when my companion's delight at the novelty of the sight we were witnessing began to manifest itself in hints and signs, which I strove in vain to quell, did they seem to take the slightest notice of us.

At times birds would pass within four or five yards of us, giving us time to observe their movements accurately. Every now and then the neck would be bent slowly and gracefully, bringing the head quite under the body, the beak continuing closed. At the same time, the foot, with the talons contracted as if holding an object in its grasp, would be brought forward until it met the beak. This position was only sustained a moment, during which the beak was seen to open; the head was then, with closed beak, raised again, and the foot thrown back. This movement was repeated very frequently, precisely the same actions being observable on every occasion, and this not only in the case of one bird, but of all of them. The bees, so far as I could observe (for I could not catch one for examination), were about the size of our English Hive-Bee, but of a brilliant colour, between red and yellow. We stayed half an hour or more, when, the swarm moving off from the road, and the birds following closely upon them, both were soon lost to us in the distance. Continuing our journey, I questioned my companion closely; but, although bred in the mountains, he had never seen more than two or three of these birds in company, nor had he ever been able to approach them sufficiently near to observe any peculiarity in their method of feeding. A few hours brought us to an eminence, from which we could see the plains of Salamà and San Gerónimo, now burnt up by the sun. Very little rain falls here after the middle of October, and the only sign of vegetable life is the beautiful green of the Sugar-cane, and the '*Nopales,*' or plantations of Cactus (*Cactus cochinellifer*), for the breeding of the cochineal insect. I was glad to get back to my comfortable quarters in the Convent of San Gerónimo, where I am now scribbling, and appreciated more keenly than ever the good taste of its founders, and my own particular luck in having access to such a harbour of refuge.

In concluding these notes, I may remark that it was quite clear that these birds were preying upon the bees; and that to me it appeared equally clear that their mode of seizing them was with the foot, by which the insect was conveyed to the mouth, because this alone could explain the actions of the foot and mouth as above described.

San Gerónimo, Guatemala,
March 30th, 1860.

XXIX.—*On Birds collected in the Somáli country, Eastern Africa.*

By Capt. J. H. Speke, F.R.G.S.

(Plate VII.)

My friend Mr. Blyth of Calcutta has given a Report on the collections which I made during my expedition into the Somáli country in the winter of 1854–5, in the twenty-fourth volume of the Journal of the Asiatic Society of Bengal. The following are some additional notes upon the species of birds of which I obtained specimens. The nomenclature is nearly the same as that adopted by Mr. Blyth.

Four of the 36 birds of which I obtained examples have eventually proved to be new to science, namely *Amydrus blythii*, *Notauges albicapillus*, *Passer castanopterus*, and *Sypheotides humilis*.

1. Pœocephalus rufiventris (Rüppell).

This is the only species of Parrot I observed in the Somáli country; but it appears to have a wide range, for I found it again during my recent expedition into Eastern Africa, as far south as 6° S. lat. They fly about in large flocks like the common Parroquets of India, and make a loud and continuous chatter. Their irides are red.

2. **Helotarsus ecaudatus** (Daudin). Native name, *Nabodi.*

I have seen this bird also as far south as 6° S. lat. Irides red. It is said by the natives to be very destructive to small animals, and to lay only one egg. The specimen obtained had a nest of small sticks loosely placed together in the upper branches of a large Mimosa-tree. It was very shy and hard to kill.

3. **Melierax polyzonus** (Rüppell). Native name, *Hatkaadag.*

Irides red. It flies very swiftly; with the habit of a Sparrowhawk. Shot on the Plateau.

4. **Bubo africanus** (Temminck). Native name, *Shimírlibah,* meaning "the Lion-bird."

5. **Buceros flavirostris**, Rüppell. Common Somáli Hornbill; called there *Kudunkutu.*

These birds fly about in bodies of five or six together, make a loud croaking sound, not unlike a frog, and are especially noisy about sunrise. These also I found six or seven degrees south of the equator during my recent journey.

6. **Irrisor senegalensis** (Vieillot).

These birds are also numerous in more southern latitudes. They fly in flocks of fifteen to twenty, and feed in Acacia-trees. They have a very offensive odour.

7. **Irrisor minor**, Rüppell.

The female is much smaller than its mate, and has a still more arched bill. Living on the Plateau, they usually frequent thickly-leaved large Acacia-trees to feed, and make a peculiar, loud, unmusical noise, but have not the same unpleasant voice as the *Irrisor senegalensis.*

8. **Dendrobates æthiopicus** (Ehrenberg).

Called by the natives *Daudauté,* from the sound it makes when tapping the hollow bark of trees in search of insects, which they shake out and feed on. I shot them on the Plateau.

9. Dendromus hemprichii (Ehrenberg).

This small Woodpecker is commoner than the last, and also inhabits the Plateau.

10. Schizorhis leucogaster (Rüppell).

Called by the natives *Gobiyun* in some places, *Fát* in others: it ranges into more southern regions. They feed in thickly-leaved trees, are very cunning when pursued, and chatter incessantly as they climb about, like Magpies, but with a noise resembling a cat's cry.

11. Oxylophus glandarius (L.).

12. Corvus affinis, Rüppell. Somali, *Tukka*.

13. Corvus umbrinus, Sundeval (?).

I saw several of these birds (perhaps from being in a transition state) marked with white tips to their front feathers, ranging from the neck to the abdomen in a succession of small semicircles. It would appear that disease was the cause of this phenomenon, since scarcely any two of them were marked alike, some having more white, whilst others had less; they flew about in common with the *Corvus affinis* and their own (I believe) umbrinous brethren. Blyth says, "Not having seen a description of this bird, we are not quite certain that it is correctly identified, especially as the late H. E. Strickland remarked of it, after noticing *C. scapulatus* (*phæocephalus*, Cab.), 'Distinguished by the length and curvature of the beak, and by the grey-brown tint of the head and neck.'"

14. Amydrus blythii, Hartlaub, Journ. f. Orn. 1859, p. 32.

I found these birds all over the country; they follow the cattle in small flocks, seldom exceeding six or seven in number. Eye dark.

15. Notauges superbus (Rüppell). Somáli, *Shimberload* or Cow-bird.

This beautiful bird I found extending to 7° S. lat. They move about in large flocks, like the India *Maina*, following after the herds of cows, whence its name is derived. Irides white.

16. **Notauges albicapillus** (Blyth): *Spreo albicapillus*, Blyth, Journ. As. Soc. xxiv. p. 301: *Notauges albicapillus*, Hartl. Somáli, *Planagur*. (Plate VII.)

Mr. Blyth describes this bird, as follows:—"Length about 12 in., of wing 6¼ in., and tail 4¾ in.; its outermost feathers ¾ in. shorter; bill to gape $1\frac{3}{16}$ in.; and tarsi $1\frac{3}{8}$ in. Colour dull metallic green, with a white cap, vent, lower tail-coverts, tibial plumes, flanks posteriorly, auxiliaries, and under wing-coverts; rest of the lower parts with narrow brownish-white mesial streaks to the feathers, which are subacuminate, and but slightly streaked on the chin and throat; secondaries chiefly dull white on their exterior webs, forming a large patch on the wing. Bill and feet black. As compared with the Cape species, *N. bicolor* (*Lamprotornis albiventris*, Swainson), the bill is less slender and Thrush-like, having more of the *Lamprotornis* form; and the tarsi are shorter; but we do not hesitate to refer it to the same genus." I found these birds feeding and flying about in the same manner, and on the ground, as the *Notauges superbus*, and also in large flocks. Irides white*.

17. **Buphaga erythrorhyncha**, Stanley. Somáli, *Hurio*.

Common about the country. They feed chiefly on lice and ticks, which they find on cattle, and are very annoying to camels who are galled by carrying baggage, by pecking at and preventing their sores from healing; five or six are generally to be seen clinging to one animal at once. When cattle are sound in skin, they seem to enjoy being cleansed by these birds, and allow them to cling about the head and neck in quiet repose. The eye of this bird is of a light and brownish red.

18. **Hyphantornis baglefecht**, Vieillot?

I found this little Baya bird on the Plateau in considerable numbers, feeding where there were long grasses and plants in flower, in company with many beautiful little Creepers.

19. **Passer castanopterus**, Blyth.

This specimen was shot on the Plateau, amongst a large flock.

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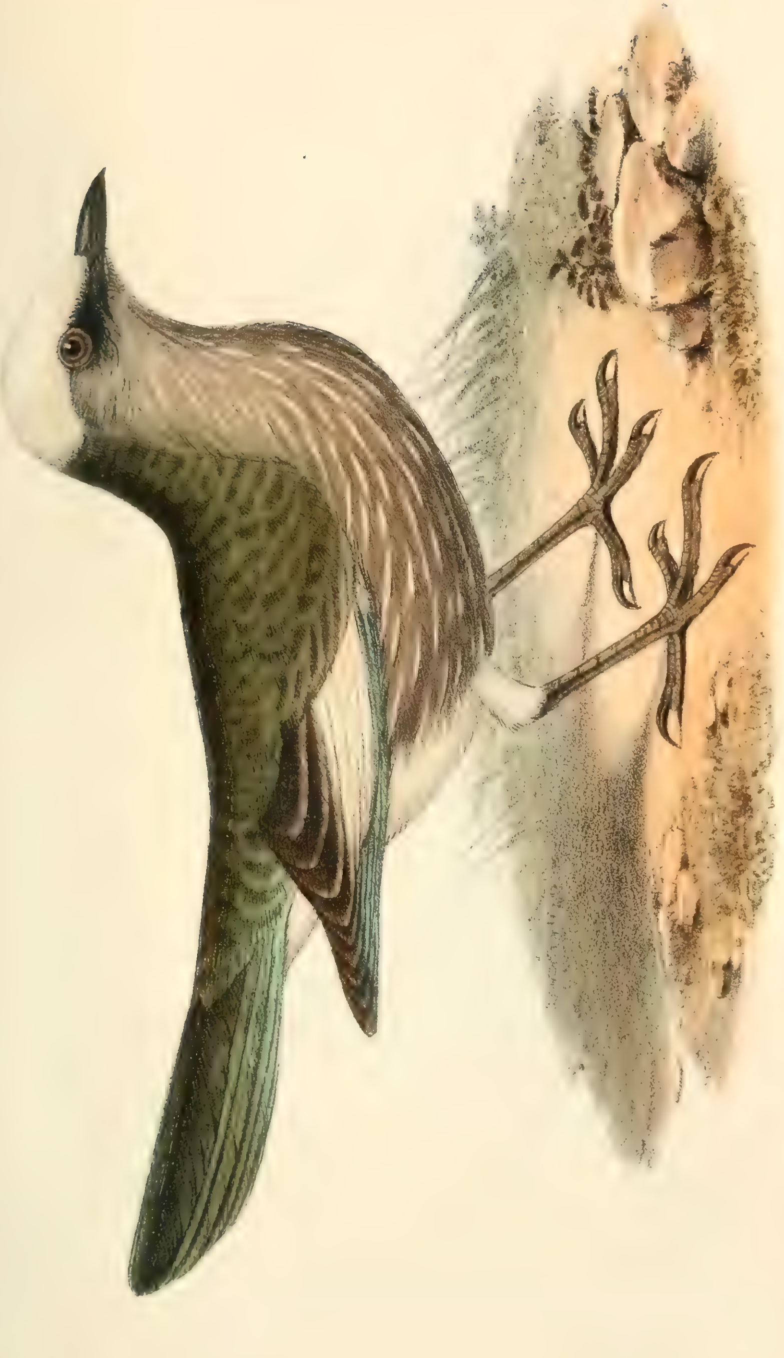
* The figure (Plate VII.) is copied from an Indian drawing forwarded to Dr. Hartlaub by Mr. Blyth.—Ed.



20. Poliospiza tristriata, Bp. *Serinus tristriatus*, Rüppell.
Shot on the mountains, where they fly about in flocks like English Sparrows.

21. Pyrrhulauda leucotis (Stanley).
This delicate little bird I found only at Bunder Goree, feeding on the sand in front of the huts. The hen bird has no black upon the breast.

22. Laniarius cruentus (Ehrenberg). Somáli name, *Idatnis.*

23. Platysteira senegalensis (L.).

24. Saxicola isabellina, Rüppell.

25. Saxicola melanura, Temminck.
These two Wheatears I found on the Plateau.

26. Dicrurus lugubris, Ehrenberg.
A King Crow, with habits like the Indian one. Irides red.

27. Nectarinia habessinica, Ehrenberg.
A beautiful species of Honeysucker, whose lustrous metallic feathers, when flitting in the sun, endeavouring to extract seed from the bells of flowers, are resplendently gaudy.

28. Nectarinia albiventris, Strickland, Jardine's Contr. Orn. 1852, pl. 86, p. 42.
Male and female. These Creepers, like the last, inhabit the Plateau, and are always found in company with them, flying about shrubs, plants, and flowers. Mr. Blyth says, this species has only been obtained in the Somáli country.

29. Pterocles senegalensis (Latham). *P. guttatus*, Lichtenstein. The Rock-Pigeon or Sand-Grouse. Somáli, *Fuku.*
These birds are found on the Plateau in large flocks, and in habits correspond with the Indian bird of the same size.

30. Pterocles lichtensteini, Temminck.
This bird frequents hills, like the Indian *Pterocles fasciatus*, the Painted Rock Pigeon of sportsmen, which it generally resembles; but it is readily distinguishable upon comparison, being a considerably larger bird, and richer in its markings. At first sight I mistook it for the Indian bird.

31. Pternistes rubricollis (Latham).

Common Somáli Partridge, called by the natives *Digrin*. It runs like the red-legged bird, and is very hard to kill; but the flavour of its flesh is good, even better than that of any other game in the country, and repays one well for the trouble of shooting it.

32. Scleroptera gutturalis (Rüppell).

I shot this Partridge on the mountain, and could not hear of its existence anywhere else.

33. Sypheotides humilis, Blyth, Journ. As. Soc. Beng. xxiv. p. 305.

A Floriken with yellow iris, called by the Somáli *Waradada*. When frightened, it flies off, uttering a loud cry like *ka-ki-rak, ka-ki-rak*. I found it here on the Plateau amongst low herbage and grass, but not so numerous as I subsequently did in Central Africa, south of the equator. The male is smaller than its mate, and has black feathers, which distinguish it, under the lower mandible.

34. Œdicnemus affinis, Rüppell. Somáli, *Kedinhitu*.

Irides light straw-yellow. In almost all particulars of habit it corresponds with the common Indian bird of the same size.

35. Chenalopex ægyptiacus (L.). Egyptian Goose. Somáli, *Etal-Jaz* ("who lives at wells").

I found these birds also on the lakes south of the equator.

36. Phalacrocorax lugubris, Rüppell. (*Carbo melanogaster*, Cuv., Par. Mus.)

A common sea-bird, which I shot at Bunder Goree.

XXX.—*History of the Derbyan Mountain-Pheasant* (Oreophasis derbianus). By Osbert Salvin, M.A., F.Z.S.

Though some years have elapsed since the discovery of this strange bird, little or no additional information has been given as regards its habits and economy. Having resided for several months in the neighbourhood of its only known locality, I shall offer no apology for entering somewhat at length upon the few facts that I have been able to pick up, relating both to the specimens previously sent and also to those that I have recently been fortunate enough to obtain.

The first specimen of the *Oreophasis* ever obtained was shot by Don Joaquin Quiñones about the year 1848, when in search, in company with Mr. Wyld of Dueñas, of the large Pigeons (*Columba fasciata*), Quails (*Ortyx thoracicus*, &c.), and other game found in the forests of Calderas in the Volcan de Fuego in Guatemala. This bird was preserved by Mrs. Wyld, and sent as a present to the late Mr. Klée, of the house of Klée, Skinner & Co. of Guatemala, and by him forwarded to the late Earl of Derby. It is now, I believe, to be seen in the Liverpool Museum, and is the specimen from which the figure in Gray and Mitchell's 'Genera of Birds' was taken.

A specimen brought to England by Mr. Skinner in the year 1855 I have not been able to trace; I believe it arrived in bad condition. For the two skins obtained by the same gentleman in the following year Mr. Skinner was again indebted to Mr. Wyld, who employed a man of the name of José Ordoñez, a native of Dueñas (a hunter of deer and peccaries), to procure them. This man has since assured me that it was not until he visited the mountain for the third time that he succeeded in shooting them. The high price Mr. Wyld paid for these two birds, and the news of their great rarity in Europe, made the *Oreophasis* more sought after; and Mr. Rittcher, a resident in Guatemala, succeeded in obtaining two, which were, I believe, forwarded to Hamburg. Don Vicente Constancia, of Antigua Guatemala, also, now has in his collection an indifferent skin.

These seven examples are all that I can hear of as having been preserved hitherto.

During the six months I spent in Guatemala in 1858, I did not obtain specimens of the *Oreophasis*, though José Ordoñez was taken into consultation. My collections were made principally in the plains about Dueñas, and not in the Volcano. Last year (1859), while absent in Vera Paz, José Ordoñez brought one to the house at Dueñas; but no one being there to skin it, it was lost. On my return I again employed the same man, and the following morning had the satisfaction to see him walk into the yard with one tucked under his arm, and again on the succeeding day with one under each arm. The first of these was a male, the other two females,—the three skins which were exhibited by Mr. Sclater at the Meeting of the Zoological Society on March 13, 1860. Being particularly desirous both of seeing the bird alive and of shooting it myself, and having the fruit taken from the crop of one of the above-mentioned birds, as a clue to indicate in what trees it would most likely be found, I set off for the mountain soon after this, with José Ordoñez for my guide. We started at six o'clock in the morning at break of day, reached the forest region at nine, and continued climbing until we had almost passed out of it into the region of Pines and coarse grass with which the peak is clothed, but no *Oreophasis* was met with. Descending again, we struck the barranco in which José had shot the specimens he brought me; but with no better success, except that I found unmistakeable "sign" in the shape of feathers, and the fruit of the tree I had been in search of. Though not successful, this expedition was satisfactory in one respect—I had seen a spot where the *Oreophasis* certainly had visited, and where my specimens had been killed. The truth of the latter fact I have no reason to doubt. From a habit one acquires of looking upon a Central American half-breed as a rascal till he has proved himself honest, I certainly did at first suspect that José was deceiving me, and that he had no idea of allowing me to poach upon his peculiar preserve of *Oreophases*. I regret that I cannot give any other than José's account of the habits of this bird; but as his stories bear a semblance of truth, I do not hesitate in transcribing them. In the early morning he told me he usually found them in the upper branches of the forest trees, searching for their favourite fruit, which they eat both ripe and unripe; as the day advances they descend to the underwood, where they remain all day, basking or scratching among the leaves. This is pretty much what a *Penelope* or a *Crax* does, both of which I have frequently had opportunities of observing in the forests of the low lands. The cry of the bird he could not describe satisfactorily.

As the Volcan de Fuego is at present the only known locality from which the *Oreophasis* has been obtained, I will here shortly describe its physical conformation. The northernmost of the three peaks into which the whole mountain is divided, seems to be, geologically, the most ancient. When this attained its present elevation (nearly 14,000 feet above the level of the sea), the fires broke out on its southern side, raising another peak equal in height to the original one. Again a fresh crater has opened on the southern side of the second peak, more nearly at its base, heaping up the vast conical mass, from the point of which still issues a thin but constant curl of white smoke. This last is the true Volcan de Fuego, the "volcano of fire," though the term is applied to the whole group. All these three mountains are united up to a high elevation, the fire-peak being connected with the other two by a horizontal ridge, which probably indicates a third outbreak on the southern slope, of less magnitude, and antecedent to the existence of the present crater. All traces of craters have disappeared from the original peaks, they having been, doubtless, filled up by ashes from subsequent eruptions. The sides of these mountains, or rather mountain (as, except very near their summit, they are actually one), are cut from top to bottom by deep ravines or barrancos. The lower part of the base, to a height of some 2000 feet above the *llano* of Dueñas, has been cleared of its forests by the Indians for their fields of maize and *frijoles*; but these cleared lands have been since abandoned, and a thick brushwood has sprung up. The forest region commences at about 2000 feet above the plain, or about 7000 feet above the level of the sea. It extends upwards until its component trees become scattered Pines, which diminish in number as the elevation increases to the summit. The lower part of this forest region consists principally of evergreen Oaks; these in their turn give way, on ascending, to the Hand Plant (*Chirostemon platanoides*), the "Khanák" of the Indians, with here and there a patch of Alder. These trees again are succeeded by Pines and coarse grass in the northernmost peaks, and by loose ashes and rocky precipices in the fire-peak. A tree called the "Palo careta," the "Khakhachay" of the Kachiquel Indians, grows between the line of junction of the Oaks and Khanak, the fruit of which is sought by the *Oreophasis*. It is a fine forest-tree, and usually grows in or near the bottoms of the ravines. It is, however, by no means common. Its fruit is about the size of a walnut, has a purple skin when ripe, and a large stone in the centre: it is ripe in January*. This forest is evidently the home of the *Oreophasis,* as the *Cracidæ* (and to this family the present bird undoubtedly belongs) are a family of forest-loving birds, any member of which would feel strangely out of its element in one of those open sunny savannas in which artists delight to place them.

In 'The Ibis,' 1859, p.224, I stated that there was good reason to suppose that the examples of *Oreophasis* procured by Mr. Skinner were obtained from the Volcan de Agua. This I find was not the case, as they were shot nearly in the same spot in the Volcan de Fuego as my specimens. Strange as it may seem, the Volcan de Fuego is the sole locality which has produced this bird. I made every inquiry for it in Vera Paz, where the forests of the mountain-tops somewhat resemble those of the volcanos, but could hear nothing of it; nor is it even known to the charcoal-burners of the Volcan de Agua. Though its non-occurrence in localities which might be supposed favourable to its existence rests on negative evidence, yet it is certain that, whereas to the Indians frequenting the Volcan de Fuego the bird is well known, nowhere else can its existence be traced, not even in the Volcan de Agua. From all I could hear, and from having made three or four fruitless expeditions in search of it, I am led to conclude that it is rare even in the single mountain where it is found. This supposition is borne out by Mr. Wyld, who has frequently inquired of the Indians of San Pedro Ipocapa and Acatenango (villages on the southern and western sides of the volcano), but could hear nothing of it.

The *Oreophasis* is known to the Indians frequenting the mountain as the "Khannanay," and to the Ladinos or half-bred Indians as the "Faisan."

The female of *O. derbianus* was until lately unknown to science. Owing, I am inclined to think, to the absence of positive information on the subject, she has been supposed to bear plumage different from the male (as is the case in *Crax*

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* Specimens of the branches and fruit of this tree have been submitted to Dr. Hooker, who has kindly identified it as a *Prunus*, closely allied to, if not the same as, *Prunus occidentalis* of the West Indies.

globicera), and probably to want the standing bony crest which forms so marked a feature in this species. From the three birds brought to me by José Ordoñez, I am able to state that the female differs in no way from the male except in being rather smaller in size, and in having the crest on the head rather shorter and more tapering. All three specimens were adult, and the ovary of the females very plainly developed. Of the sex of the male, too, I can speak with equal certainty. Comparing the sternum with that of *Penelope purpurascens,* a very marked affinity is observable. The cranial protuberance is attached to the skull. It is hollow, the cavity being filled with a cellular tissue, as in the bill of a Toucan (*Ramphastos*). The enclosing bone is extremely fragile, and in the females may easily be crushed between the finger and thumb. The crest is deep vermilion in colour, also the legs and toes. The bill is a very pale straw colour, and the iris white. The male, the day after it was killed, weighed 5 lbs.

11 Hanover Terrace, Regent's Park,
May 25th, 1860.

XXXI.—*Recollections of the Swans and Geese of Hudson's Bay.* By George Barnston, of the Hudson's Bay Company's Service.

Swans, except in a few particular localities, are scarce, rather than plentiful birds on the shores of Hudson's Bay. They are seen at the same time as the other migratory birds, winging their way to the secluded recesses of the North, resting throughout the interior, and losing units of their number here and there by the Indian's gun. In the scarcity of their favourite food (the roots of the *Sagittaria sagittifolia*), they have recourse to those of *Equiseta,* and the tender underground runners of some grasses of the northern latitudes. They sometimes breed in the interior before arriving at the coast. I had two eggs brought to me from a nest on the banks of a lake near Norway House; but I cannot say whether these were of the *Cygnus americanus* or *C. buccinator*. Towards Eastmain Fort, in James's Bay, a considerable number of Swans hatch; and a few are killed by the natives there, as they pass up and down narrow rivers communicating with the sea-coast and the lakes of the interior. The numerous flocks that are to be seen in the winter months on the expanses of the larger rivers that run into the Pacific, embellishing all the larger sheets of water with their silvery strings, must break up as they enter or advance upon their long spring journey, for they are generally seen but few together in the neighbourhood of Hudson's Bay. They may be more united, however, at the particular haunts where they breed.

Superior to the Swan as an article of food, the Goose, of every species, is the favourite dish of the Indian of Hudson's Bay. When the long and dreary winter has fully expended itself, and the Willow Grouse have taken their departure for the plains of the North, there is frequently a period of rank starvation to many, who are on their way from their wintering ground to the Trading Posts. The first call, therefore, of the large Canada or Grey Goose is heard with a rapture known only to those who have endured great privations. The tents are filled with hope, to which joy soon succeeds, when the happy father or hopeful son and brother throw down their grateful load.

The *Bernicla canadensis,* here alluded to, is the largest of our Geese, and is almost always first seen in the Hudson's Bay Company's territories,—at first perhaps only one straggler, or two or three at most together, but soon to be followed by a continuous flock of fresh immigrants. They are the advanced guard of the serried legions of other water-fowl. This spring-bird, as if aware of the general favour in which it is held, spreads itself diffusively over the whole breadth of the continent. Its disposition has less of wildness in it than that of the Snow Goose. We find it hatching in quiet holes and corners where there is placid water and grass and rushes to afford it sustenance. It is at home over the whole wooded country, as well as on the extensive marshes of the sea-coast, and the mossy barrens of the Esquimaux and Chipewyan Lands. During the winter, like the other species, they take refuge in the more temperate parts of the country, where they can always have open water. I have seen a small flock in the strong open current of water above Lachine, near Montreal, in the month of January or February; but this is rare.

During the whole of the winter season, before Oregon was settled in by the Americans, the Company's post of Fort Vancouver used to be supplied by Indian hunters with Grey Geese, large and small, as well as an occasional Swan and Snow Goose,—at times so liberally, that rations could be furnished to an establishment of thirty or forty out of the store. Some of these Geese had been killed by the bow and arrow. They were good food, but not in equal condition to what they are in the North after a week's feed. The great mass of the Canada Grey Geese winter, I have no doubt, to the southward of the Missouri and Platte waters, in the swamps of Florida and the lower Mississippi, and on the waters of the western side of the continent, near their confluence with the Pacific. In these last haunts they are thinned by the Indian's arrow, as they are in the North by the more deadly gun.

The Lesser Grey Goose (*Bernicla hutchinsii*) arrives later in the season than the other, and about the same time as the Snow Goose (*Anser hyperboreus*). They are shot in considerable quantities at Albany and elsewhere along the coast of James's Bay. I believe they do not incubate, like the large Geese, in scattered or detached portions throughout the wooded country, but proceed in large and united flocks to the extreme North, where they may have quiet quarters. On their arrival at the coast, about the beginning of May, they commence feeding in the salt marshes amongst the soft white-rooted grasses,—continuing there for a fortnight or three weeks with the "Wavies" or Snow Geese. By this time they are in good plight, and they take their departure, not again to appear until their return with the young broods in the month of September. These smaller Geese are killed in fewer numbers on their passage to Hudson's Bay than the larger, which may be accounted for by their habits; but when once they settle on their feeding-ground, the tables turn upon them, and the slaughter committed in their ranks, especially at Albany, is wonderful.

The Brant Goose (*Bernicla brenta*), the Callewapimaw of the Coast Crees, is but little looked after or cared for in Hudson's Bay, being a small species, keeping out to sea on the shoals near low water-mark, and affording a less esteemed dish for the palate. They arrive, I believe, latest of all the birds of the genus.

The Snow-Goose (*Anser hyperboreus*), although playing a less conspicuous part in the interior of the country, where it seldom alights except along the margins of the large lakes and streams, and the extensive grassy lakes of the prairies, becomes, from its consolidated numbers, the first object of sport in James's Bay. The havoc amongst them is great, and even the Indian gets fatigued at the trade of killing. In the fall, on some days when the flocks of young "Wevois" or Wavies, as they are called, are numerous and passing southwards, it is no uncommon thing for a good shot to send a hundred to his lodge between sunrise and sunset. In such cases he generally has two guns in his willow and grass stand or concealment, and his wife or son loads, while he attends to the motions of the Geese, brings them round to the bush or wooden decoys by calling, and fires as they pass. These Geese form the staple article of food for rations at the Albany Factory. They are the last to leave the coast for southern climes; and this takes place generally towards the end of the month of September, some weak broods and wounded birds lingering to the first week of October. They are deliberate and judicious in their preparations for their long flight, and make their arrangements in a very business-like manner. They leave off feeding in the marshes for a day or more, keeping out with the retreating ebb tide, and retiring as it were by steps, unwillingly, at its flow, adjusting their feathers continually, and dressing them with their fatty oil. They are then ready for the first north or north-westerly wind that blows; and in 24 hours' time the coast that had been resonant with their petulant and incessant cries, and covered patchlike by their whitened squadrons, is silent and deserted—a barren and frozen shore.

The friendly intercourse that exists between these Geese and the Blue Wavies (the *Anser cærulescens*) has perhaps induced some to suppose that they were merely varieties; but this is a mistake. The young white Wavies arrive from the North with their parents, without mixture of other geese in the flocks; and they have the same white garb as the old birds, but with the head as if it had been soiled with rust of iron, and the bill, as is well known with young birds, tender, soft, and compressible; while, on the other hand, the *Anser cærulescens* comes down upon the eastern coast, also in perfectly distinct flocks, the young birds having a more diffused and darker blue colour, as well as being of smaller size, with the beak softer and the flesh more tender. About this there can be no mistake. In the spring, James's Bay is frequently crossed by both species of the Wavy, at Capes Jones and Henrietta Maria; and occasionally two or three Blue may be seen in a large flock of White on the Albany shore, while two or three White may be also observed accompanying the full flocks of Blue on the Eastmain side; but this is not singular, as their cry is almost the same, and they are certainly closely allied species—but not varieties. By Indian report, a great breeding-ground for the Blue Wavy is the country lying in the interior from the N.E. point of Labrado, Cape Dudley Digges. Extensive swamps and impassable bogs prevail there; and the Geese incubate on the more solid and driest tufts dispersed over the morass, safe from the approach of man or other than a winged enemy.

The *Anser gambelii*, or Laughing Goose, is seldom seen in the southern part of the Bay. At York they are less rare, and at Churchill frequent enough. Although I cannot speak with certainty, I am disposed to believe that the Laughing Goose is more an inhabitant of Central and Western America in the winter months, than of the eastern side, and that therefore, in its progress northward, it strikes upon the coast westward of James's Bay, where it is seldom seen. On the Lower Columbia and in Oregon, or Willamette Valley, they abound, with other wild-fowl, when, as frequently happens, the winter is mild and there is no snow on the ground.

Of all the Geese enumerated, the *Anser cærulescens* appears to be the least known, and, it is possible, frequents in summer only James's Bay and the Eastmain of Labrador, at the extremity of which peninsula it hatches. Of its winter haunts I cannot speak with certainty, not having seen them either on the Columbia or on the north-west coast. It may be that they adopt the sea-coast in a lower latitude as a home, and are to be found towards Southern Mexico.

It is difficult to form a very accurate idea of the numbers of that portion of the genus *Anser* which we have just passed under review. Of the quantity shot at particular points where they become a matter of provision for the Hudson's Bay Company's establishments, we can arrive at a pretty exact estimate. Seventeen to twenty thousand Geese are sometimes killed by the Albany Indians in the fall of the year, and perhaps about half of that number in the spring, say the end of April and the month of May, making a total for Albany alone, of all descriptions of the above-mentioned geese, of 30,000

I cannot speak so decidedly as to the other parts; but, at a fair computation from what I know of them,	
Moose may afford in some years nearly	6,000
Rupert's River Post	5,000
Eastmain and to the northward	4,000
making a total for James's Bay of	45,000
Along the Hudson's Bay western coast in the northern department, I should say that far fewer were bagged.	
Severn stands well as a hunting-station where Geese are plentiful and Indians numerous, and I cannot compute its annual yield at less than	8,000
York Factory frequently fails in procuring any considerable supply, and I therefore would not rate it as giving more than	2,000
Churchill is generally better than this; and when the Chipewyans belonging to the establishment come in great numbers to the Goose-hunt, we may reckon upon	2,500
We thus have an annual thinning of the wild Geese passing northwards and southwards along the coasts of Hudson's Bay of	57,500

But as many Geese must die wounded, and others be got hold of by the fox, we may safely make the total loss to the flocks running the fiery gauntlet as 60,000. Of these perhaps 40,000, or two-thirds, are shot in the fall.

Now supposing that one-eighth of the whole bands fall to the gun, we have a round number of 360,000 Geese proceeding southwards from Hudson's Bay alone to the warmer latitudes. I cannot form an opinion of the comparative numbers to the westward, that is to say, of the Geese that leave the Arctic coast and wend their way straight to their winter quarters without touching the Bay at all; but supposing it to equal the flight of the body already mentioned, we shall then have 720,000, or perhaps say 800,000 Geese leaving the coasts east of the Rocky Mountains for their places of hybernation:—the Brant Geese are not included. This may be supposed much underneath the true estimate, yet I would not wish to give a greater; for although the swarms of Geese passing appear at times prodigious, yet, like many other scattered objects, when they come to be collected and counted, they become subject to a moderate figure. Say that Geese fly about a yard apart: this would make a winged string of life 450 miles in length; and suppose the rate of flight was 40 miles per hour, and the line led by one going straight south, they would take eleven hours in passing any given object.

Michipicoton, Dec. 6th, 1859.

XXXII.—*Notes on the Humming-birds of Guatemala.*

By Osbert Salvin, M.A., F.Z.S.

The following notes relate to species of Humming-birds observed in Guatemala, at Dueñas, Coban, and Salamá, during the months of August, September, October and November 1859.

The references to each species will be found in the previous papers on the Ornithology of Central America published in this Journal.

As I have collected many examples of the several species of Humming-birds, I take the opportunity of illustrating, by actual figures, the ratio in numbers the males bear to the females, and give under each separate species that ratio, as shown by the specimens before me.

It may be from not having hit upon the localities for the opposite sex, that I have found one, be it male or female, usually largely predominating; yet it seems somewhat strange that the localities in which I have worked should have been, with few exceptions, those in which the males most abound. I will not raise an hypothesis on this subject upon the facts that I have, up till now, collected, but merely state the numbers, and wait for further investigations.

1. Phaëthornis adolphi.

Coban, Vera Paz. November 15th.

Though not common about Coban, this species seems pretty generally dispersed. Like many others, it feeds among the *Salviæ*. To a practised ear its presence may be detected by the peculiar hum of the wings. This at once warns the collector to look out sharply among the lower branches and flowers, which are well searched by this bird, while the upper shoots of the bush are comparatively neglected. At Yzabal, where *P. adolphi* abounds, its habits somewhat differ. This is probably owing to the very different nature of the plants from which it takes its food, rather than to any other cause. If the females are to be distinguished from the males by their yellower throat, the ratio of the sexes is two females to seven males.

2. Campylopterus delattrii.

Coban, Vera Paz. November 1859.

The large size and showy tail of this Humming-bird make it one of the most conspicuous when on the wing. It is common at Coban, feeding among the *Salviæ*. It is said also to be found in the Volcan de Fuego, but I have not yet met with it. The females of this species are most abundant, their ratio to the males being as five to two. *C. delattrii* is not nearly so shy as its congener, *C. rufus*.

3. Campylopterus pampa.

Coban. November.

A single female specimen only was brought to me while at Coban.

4. Petasophora thalassina.

Volcan de Fuego. September 6th.

The barrancos of the Volcano are favourite resorts of this species.

Dueñas, September 15th. A specimen obtained on this day is the only one I have seen out on the llaño, as the bird is usually found in the dense forest.

5. PETASOPHORA DELPHINÆ.

Coban, Vera Paz. November.

This Humming-bird seems to have been quite unknown at Coban previously to the present specimens being collected. The first was shot by my collector, Cipriano Prado, among some *Salviæ*, in one of the mountain-hollows near Coban. I afterwards visited this place and saw one bird, but did not succeed in shooting it. *Salviæ* being in flower in November, their blossoms are sought after by nearly every species of Humming-bird near Coban, this among the rest. It is a rare species even at Coban, and though much looked for by the Indian boys in consequence of my offers of reward, but few specimens were obtained.

The females appear only to differ from the males in being smaller in size, the colouring of the ear and throat being quite as brilliant. Three males to one female appears to be about the proportion of the sexes.

6. CYANOMYIA CYANOCEPHALA.

Dueñas and Coban.

This species is common at Dueñas, but its numbers at Coban are very much smaller. The sex of the young males seems sufficiently indicated by the colouring of the head.

7. EUGENES FULGENS.

Dueñas, Coban, and Tactic.

This species is also rare at Coban. The place described as frequented by *Amazilia dumerillii* is the spot where I have found this species in greatest numbers; indeed, with two exceptions, I have never met with it elsewhere near Dueñas. It is a most pugnacious bird. Many a time have I thought to secure a fine male, which I had perhaps been following from tree to tree, and had at last seen quietly perched on a leafless twig, when my deadly intention has been anticipated by one less so in fact, but to all appearances equally so in will. Another Humming-bird rushes in, knocks the one I covet off his perch, and the two go fighting and screaming away at a pace hardly to be followed by the eye. Another time this flying fight is maintained in mid air, the belligerents mounting higher and higher, till the one worsted in battle darts away, seeking shelter, followed by the victor, who never relinquishes the pursuit till the vanquished, by doubling and hiding, succeeds in making his escape. These fierce raids are not waged alone between members of the same species. *Eugenes fulgens* attacks with equal ferocity *Amazilia dumerillii*, and, animated by no high-souled generosity, scruples not to tilt with the little *Trochilus colubris*. I know of hardly any species that shows itself more brilliantly than this when on the wing; yet it is not to the midday sun that it exhibits its splendour. When the southerly wind brings clouds and driving mist between the volcanos of Agua and Fuego, and all is as in a November fog in England, then it is that *Eugenes fulgens* appears in numbers; *Amazilia dumerillii*, instead of a few scattered birds, is to be seen in every tree, and *Trochilus colubris* in great abundance. Such animation awakes in Humming-bird-life as would hardly be credited by one who had passed the same spot an hour or two before; and the flying to and fro, the humming of wings, the momentary and prolonged contests, and the incessant battle-cries seem almost enough for a time to turn the head of a lover of these things. I have fifteen males from Dueñas to one female, which I shot, but did not skin,—one male from Coban, and two males from Tactic.

A "London fog" must not be understood here, as the yellow element is entirely wanting.

8. MYIABEILLIA TYPICA.

Volcan de Fuego (September 6th) and Coban.

The barrancos of the Volcano are the only localities I am aware of, near Dueñas, where this species is found. There, however, it is a common bird. It is usually to be seen feeding about the brushwood, seeking the flowers, &c. It is a restless species, but shows little symptoms of fear.

My skins from the Volcano are one female and three males. The proportions at Coban are very different. Here it is common, being found in all the mountain-hollows, feeding among the *Salviæ*. The ratio of the sexes is as twenty males to one female.

9. DELATTRIA VIRIDIPALLENS.

Volcan de Fuego. September 18th.

This Humming-bird seems to keep entirely to the forests of the Volcano. I have never met with it in the plains below.

During the months of August and September, the localities of the various species of Humming-birds are usually as follows:—Among the trees on the south-eastern side of the lake are *Amazilia dumerillii, Thaumastura henicura* (mostly females), *Campylopterus rufus, Heliomaster longirostris, Chlorostilbon osberti* (in small numbers), *Cyanomyia cyanocephala,* and *Trochilus colubris.*

On the hill-side to the south-westward of the lake are great numbers of *Campylopterus rufus,* and among the willows close to the water the males of *Thaumastura henicura* congregate. About the Convolvulus-trees in the llaño at the foot of the Volcano are found *Eugenes fulgens, Amazilia dumerillii, Thaumastura henicura* (in small numbers), *Trochilus colubris* (very commonly towards the end of September), *Cyanomyia cyanocephala, Heliomaster longirostris* (rarely occurring).

Entering the first barranco that opens out into the plain, we meet with *Campylopterus rufus, Myiabeillia typica, Heliopedica melanotis,* and, a little higher up, *Petasophora thalassina* and *Delattria viridipallens.* Of course, occasionally a species is found not in its place as here indicated; for instance, I have seen in the first locality a single specimen (the only female I have met with) of *Eugenes fulgens,* and another high in the Volcano. I have also seen a single *Petasophora thalassina* out on the llaño. These localities must therefore be taken as only generally indicating the distribution of the species found about Dueñas.

This is one of the commonest species at Coban. It may readily be recognized by the peculiar harshness of its note.

10. HELIOMASTER CONSTANTI.

San Gerónimo.

A single specimen was brought to me by a boy. I never saw the species myself at San Gerónimo.

11. HELIOMASTER LONGIROSTRIS.

Dueñas.

The white sides and the white spot on the back show very conspicuously as this bird rests on its perch.

12. THAUMASTURA HENICURA.

Dueñas. August.

The Humming-birds' nests near the house at Dueñas, in the year 1859, met with singular misfortune. Without looking especially for them, I found three of *Cyanomyia cyanocephala*, three of *Thaumastura henicura*, and one of *Campylopterus rufus* close by, besides others more distant. Of these seven, one only, or perhaps two pairs, succeeded in rearing their young. The three nests of *C. cyanocephala* were all in the Cypress-trees. The first I took; the second was destroyed by some Indians after the eggs had been incubated for some time; the third remained unmolested, but I was not able to ascertain whether the young birds were reared. The nest of *C. rufus* was also in one of the Cypress-trees, at a height of about 5 feet 6 inches from the ground. It had two eggs when I found it; but the day following, eggs, nest, and the branch on which it was placed, were destroyed by some Indians who were working near. I am unable therefore to describe accurately the construction of the nest of this last species, and can only remark that the old bird, most probably the female, allowed me to approach very closely—indeed, so near that my head was within a foot of her. Of course I was obliged to tread softly and slowly, and to keep my eyes steadily fixed upon her. This tameness was a strong contrast to the usually shy habits of this species.

Two out of the three nests of *T. henicura* met with no better fate than those just mentioned. One of these two was in a Coffee-tree, and had two eggs. These were destroyed by some means or other, soon after the hen bird had begun to sit. The other nest of the two was most curiously placed in the cup-shaped top of a fruit of the Nopal (*Cactus cochinellifer*), the fastenings being dexterously wound round the clustering prickles, and thus retaining the whole structure most firmly in its place. This nest was remarkably shallow; so much so, that, if it had not contained its two eggs, I should have pronounced it far from complete. It may be that, being based on a firm foundation (one not nearly so liable to oscillation by the wind), the bird had found that a greater depth was not necessary to keep the eggs from falling out. Had she placed her nest on a slender twig, such a one as seems to be the usual position chosen, the case might have been different. The third nest had young. It was placed in the upper shoots of a Dahlia which grew at the further end of the court-yard of the house. The hen bird seemed to have the entire duty of rearing the young, as I never once saw the male near the place; in fact, I never saw a male *T. henicura* inside the court-yard at all. When the hen was sitting she would sometimes allow me to go quite close to her, and even hold the branch still when it was swayed to and fro by the wind, without evincing the slightest alarm. But it was only when a hot sun was shining that she would allow me to do this; when it was dull or raining, four or five yards was the nearest I could approach. Frequently when I had disturbed her I would sit down close at hand and wait for her return, and I always noticed that, after flying past once or twice overhead, she would bring a small piece of lichen, which, after she had settled herself comfortably in her nest, she would attach to the outside. All this was done with such a confident and fearless air, that she seemed to intimate, "I left my nest purely to search for this piece of lichen, and not because I was afraid of you." When sitting upon her nest the whole cavity was quite filled by her puffed-out feathers, the wings, with the exception of their tips, being *entirely concealed* by the feathers of the back. When the young were first hatched, they looked little, black, shapeless things with long necks and hardly any beak. They soon, however, grew, and entirely filled the nest. I never saw the old bird sitting after the young had emerged from the eggs; she seemed to leave them alike in sun and rain. When feeding them, she would stand on the edge of the nest with her body very upright. The first of these young ones flew on October 15. It was standing on the side of the nest as I happened to approach, when it immediately flew off, but fell among the flowers below. I placed it again in the nest, but a moment after it was off again, nothing daunted by its first failure,—this second time with better success, for it flew over a wall close by and settled on a tree on the other side. In the evening of the same day, I saw the old one feeding it, and went up to the tree; but it started off with increased vigour to an orange-tree, and tried at first to rest on one of the fruit, but failing, found a more appropriate perch on the edge of a leaf. I never saw it afterwards.

The other young one flew on October 17th, two days later. The proportion of males to females, of my Dueñas skins, is as five to three, while of those from Coban, as three to five.

The seeds of the willow and bulrush are favourite materials for the interior structure of the nest of *T. henicura*, while lichen is freely used outside.

13. SELASPHORUS HELOISÆ.

Volcan de Fuego and "tierra caliente" N. of Coban.

Two birds were given to me by Don Vicente Constancia, who had just received them from a place called Chimachoyo, near Calderas in the Volcan de Fuego. Two specimens I have in my collection from Coban were shot in the tierra caliente north of that city. Hence it would appear that this, like many other species of Humming-birds, is found in very different climates.

14. TRYPHÆNA DUPONTI.

San Gerónimo. December 10th.

Don Vicente Constancia assures me that this species is found near the city of Guatemala; otherwise this is the only locality I have been able to discover, as yet, where it occurs.

Following the course of the river of San Gerónimo up its bed to a distance of about half a league from the village, you come upon a small patch of forest with here and there open spots covered with *Salviæ*. Here it was that this bird was shot by a boy, who told me there were plenty; however, on visiting the place soon after, I was not successful in obtaining more specimens, nor was I fortunate enough to see one.

15. TROCHILUS COLUBRIS.

Dueñas and Coban.

The 24th of August was the day on which I first met with this little wanderer from the North. I was shooting some specimens of *Eugenes fulgens* in the locality mentioned for *Amazilia dumerillii*, when I saw and shot a male in one of the

Convolvulus trees. From that date the numbers rapidly increased until the first week in October, when it became by far the commonest species about Dueñas. My first impression on seeing this bird was that it remained in small numbers to breed in this country; but on observing the increasing numbers, I soon relinquished the idea, though it was a natural one, as, at the time of my observing the first bird, in a locality previously unvisited, I was fully aware that *Campylopterus rufus, Thaumastura henicura,* and *Cyanomyia cyanocephala* were either building, or sitting on their eggs. Another proof also that *T. colubris* was not engaged, or about to engage, in domestic duties, was that whereas the resident species in the month of October wore their most brilliant plumage, that of *T. colubris* was tarnished and its lustre gone. The species seems to be very universally distributed; I found it common at Coban, also at San Gerónimo and the plains of Salamá. Of my skins from Dueñas the proportion of males to females is as one to four, but those from Coban exactly as one to one.

16. LOPHORNIS HELENÆ.

Coban. November 17th.

It was interesting to find that the recollection of M. Delattre's visit to Coban was still cherished by the bird-collecting community of that town. In fact he seems to have started the idea of collecting, and ever since there have been persons there who have handed down his original instructions in bird-skinning, so that, from preparing a few Quesals (*Pharomacrus paradiseus*), the Cobaneros have become somewhat celebrated for having formed the various collections which have from time to time been forwarded to Europe from their neighbourhood.

Mr. Gould, in his great work on Humming-birds, gives as a locality for this species "Petinck" (*Peten* ?) in the Vera Paz. In the vicinity of Coban itself it is not uncommon, though hardly to be called numerous, and it is most probable that Vera Paz skins have usually been forwarded from this latter place. I was greatly delighted to find myself in the localities of this wonderful little bird—a success I had hardly hoped for, and I made every endeavour during my short stay both to see the bird in its living state and to get specimens.

On my first arrival in Guatemala the different species of Humming-birds seemed for some time to be alike in their habits, cries, and in the sound produced by their wings. Further acquaintance, however, and constant attention to their peculiarities, soon led me to detect an individuality in the different species, so that, after a time, I was able to name a species at a glance, or, if unseen, with hardly less certainty, from the sound of the wings or cry of the bird. These are differences not to be described accurately in words—at least only in the case of those most apparent. The cry of *Lophornis helenæ* is peculiarly shrill, and unlike that of any other species I know, hence its presence may be noticed if only the cry of a passing bird be heard. It feeds among the *Salviæ* that so abound in the mountain-hollows about Coban, and it is said also to show a partiality for the flowers of the *Tasisco,* when that tree is in full bloom in the month of December. In the month of November females of this species are very rare. Of the specimens I collected there was only one female to seventeen males.

In the Indian language of Coban, *Lophornis helenæ* has, besides the name "*Tzunnun,*" which is applied to all the small Humming-birds, the additional name of "*Achshukub.*" The Spanish name is "*El Gorrion Cachudo*"—the Horned Humming-bird.

17. Amazilia corallirostris.

San Gerónimo. December.

This is a common species about San Gerónimo. It seems not to be found in the colder and more elevated portions of the Republic, neither occurring at Dueñas nor Coban, but it is very plentifully distributed throughout the Pacific coast-region. It shows a great partiality for the blossoms of the orange and the lime. A nest with two young and the hen bird were brought to me December 6th; the young were half-grown, and would have flown in about ten days. Finding unfledged birds thus late in the season, one is tempted to apply to Humming-birds the question of the entomologist, "Is *Gonepteryx rhamni* double-brooded?"

October is the month of all others that flowering plants and trees put forth their blossoms. It would seem that the nesting season of the Humming-birds is postponed after that of other species, in order that, when the young birds make their first essay to provide for their own sustenance, the flowers of the forests and plains should be in greatest abundance. Hence, perhaps, it is that September is the month during which the Humming-birds of Guatemala are principally engaged in incubating their eggs and rearing their young,—a time when the young of other birds have long been able to shift for themselves. Perhaps also it would appear that a certain amount of experience is necessary for the young Humming-birds to obtain a regular supply of food, and that to gain this experience it is also necessary that the showy flowers should be in bloom to attract attention, enabling them with greater ease to obtain the requisites of life, until they learn where else their insect prey is to be found among the leaves and shoots.

Though September and the end of August are the months when the Humming-birds of Guatemala usually appear to build, they are not the only ones. In 1858 I found a nest of *C. cyanocephala* in June, and in 1859 one in July, and again a nest of *A. corallirostris* in December.

Other birds show extreme irregularity in their breeding seasons, so much so that one might birds'-nest all the year round. No suppositions respecting the seasons of two places deduced from the fact of the same bird being found breeding in two different months, can be safely inferred, the difference being so great in the same place.

My specimens of *A. corallirostris,* though not in excellent plumage, I think show that, as far as the feathers are concerned, the sexes are alike. A difference, however, exists in the bill, that of the male having much more of the brilliant colour, from which the species takes its name, in the upper mandible.

In the young bird the upper mandible is black. In speaking of this colouring of the bill, I may mention that it appears to be due to the transparency of the outer film of the bill allowing the blood to show through, and not to any especial colouring-matter. This seems to be the case also in many other species, as in *Chlorostilbon osberti, Heliopædica melanotis, Amazilia riefferi* and *A. dumerillii, Lophornis helenæ, Cyanomyia cyanocephala,* &c.; and I think it more than probable that where the bill of a dried skin shows markings of a dull flesh-colour, that part has been coloured in the living bird with some shade of red. There are cases, however, where actual colouring matter is to be noted, in addition to the usual horn-black, as in *Phaëthornis adolphi*, where the basal half of the lower mandible is straw-colour.

18. AMAZILIA RIEFFERI.

Coban. November.

This *Amazilia* is found also at Yzabal. It is far from common at Coban. All my specimens appear to be males.

19. AMAZILIA DUMERILLII*.

Dueñas. August.

During the months of July, August, and September, one of the most favourite resorts of this Humming-bird was the western boundary of the llaño of Dueñas, which, starting from the village, and bounded to the eastward by the river Guacalate, extends, sweeping by the base of the Volcan de Fuego, almost to the Hacienda of Capertillo, its southern extremity. Dispersed all over this plain is found, in groves, patches, and isolated trees, a Tree-Convolvulus, bearing a white flower, and attaining an average height of about 25 or 30 feet. During the above months, this elegant species might be seen in almost every tree, some feeding among the flowers, some settled quietly on a dead branch, uttering their low, plaintive, hardly to be called musical, yet certainly cheering song; others less peacefully occupied in a war of expulsion, driving out, by vehement cries and more effectual blows, the tenant of a tree, which in its turn wreaks vengeance on some weaker or unexpectant antagonist.

Of this species I have skins, of which the sexes are in the proportion of four males to one female.

20. THAUMANTIAS CANDIDUS.

This species, which is very abundant about Coban, is found also at Yzabal. Many species of Humming-birds in Guatemala extend through a great range of temperature, the same species being frequently found both in the coast-regions and also in the more elevated districts.

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* This *Amazilia* I have previously called *A. arsinoë*; but upon comparing my specimens with Mr. Gould's numerous examples of the Mexican *A. arsinoë* (which I have been enabled to do through his kindness), I find it distinct, and correctly referable to *A. dumerillii*.

Thus, *Phaëthornis adolphi* is found at Yzabal and Coban; *Amazilia dumerillii* at Yzabal and Dueñas; *Selasphorus heloisæ* at Cajabon, in the "tierra caliente" north of Coban, and at Calderas in the Volcan de Fuego; *Heliomaster longirostris* near Guatemala (Constancia), Dueñas, and Escuintla (Constancia). Some species, however, seem to be much more restricted in their range.

The males of *T. candidus* largely predominate in numbers at Coban: of those actually dissected, the ratio is as seven males to one female; but, comparing these with the rest, the ratio becomes eleven to one.

21. HELIOPÆDICA MELANOTIS.

Volcan de Fuego, Coban, and San Gerónimo.

In some of the open savannas which are scattered among the oak-forests of the Volcan de Fuego near Calderas, this species is not uncommon; in some of the "barrancos" also of the same Volcano, I have frequently met with it.

The white mark running from the eye and the deep coral-red of the bill show conspicuously in the living bird. It is a very shy species.

A single bird was shot and skinned by Cipriano near Coban, and one specimen was brought to me from the mountains of S. Cruz, near San Gerónimo.

22. EUPHERUSA EXIMIA.

This is one of the commonest Humming-birds of Coban, being found everywhere near the city. The ratio of the males to the females is as ten to three.

23. CHLOROSTILBON OSBERTI*, Gould.

Dueñas and San Gerónimo. Not uncommon at San Gerónimo.

The only other species of *Trochilidæ* I have observed in Guatemala are—*Phaëthornis cephalus*, of the Vera Paz; *Campylo-*

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* This name was given by Mr. Gould to a *Chlorostilbon*, very closely allied to *C. caniveti*, described at the Zoological Society's Meeting, June 12th, 1860.

pterus rufus, of Dueñas; *Lampornis prevosti,* of Escuintla; *Chrysuronia eliciæ,* of Coban; *Heliothrix barroti,* of the northern tierra caliente; and *Lamprolæma rhami,* of the Volcan de Fuego, making altogether twenty-nine species. Three others I have not been so fortunate as to meet with, namely *Florisuga mellivora,* of the northern tierra caliente, and *Delattria henrici* and *Selasphorus platycercus,* which are said to occur in the Volcan de Fuego, on Don Vicente Constancia's authority.

XXXIII.—*Contributions to the Ornithology of Guatemala.* By OSBERT SALVIN and PHILIP LUTLEY SCLATER. Part II.

[Continued from page 45.]

DURING the autumn of 1859 I collected, in the vicinity of Dueñas on the table-land of Guatemala, and near Coban and Salamá in the Vera Paz, about 870 specimens of birds, belonging to 245 different species, 39 of which are new to the fauna of this country, and have not been noticed in previous papers in this Journal relating to the ornithology of Central America. Of these I now give the names, as determined by Mr. Sclater and myself, together with my field-notes written concerning them at the time they were obtained, and some joint remarks on their synonymy and distribution.—O. S.

1. TURDUS ASSIMILIS, Cab.: Sclater, P. Z. S. 1859, p. 327.

Dueñas, August 1859. Two specimens were obtained in the above locality. I never met with *T. leucauchen,* Sclater, which appears to be common in the low lands of the northern portion of Vera Paz, in this part of Guatemala.

2. TURDUS PALLASI, Cab.: Sclater, P. Z. S. 1859, p. 325.

Coban, Vera Paz, November 1859. A single specimen, apparently of this species.

3. CYPHORINUS PROSTHELEUCUS (Sclater). *Scytalopus prostheleucus,* Sclater, P. Z. S. 1856, p. 290.

Volcan de Agua, January 1860. A single specimen, obtained at an elevation of about 6500 feet, agrees nearly with Mexican skins of this bird in Sclater's collection.

4. TROGLODYTES BRUNNEICOLLIS, Sclater, P. Z. S. 1858, p. 297.

Volcan de Fuego, September 1859. This Wren is only found in the forests and barrancos of the Volcano. It is most nearly allied to the Mexican species described as above mentioned, but is not quite similar to Mr. Sclater's specimens.

5. SIURUS LUDOVICIANUS (Bp.).

Alotenango, September; Volcan de Fuego, August; Coban, Vera Paz, November 1859. A dry water-course in the forest, or in the bottom of a barranco, seems to be the favourite resort of this Water-Thrush, while its congener, *S. noveboracensis*, seeks rather the more open streams.

6. GEOTHLYPIS ÆQUINOCTIALIS (Gm.).

Dueñas, September 1859. This bird appeared about the same time as the northern *Mniotiltidæ*. It is, however, far from common. It agrees with S. American examples in Sclater's collection.

7. DENDRŒCA CHRYSOPARIA, Sclater and Salvin, P. Z. S. 1860 (May 16th).

I obtained a pair of this beautiful Wood-Warbler on the highest point of the road between Salamá and Tactic. In the coloration of its plumage it partakes of the characters of both *D. virens* and *D. townsendii*.

8. DENDRŒCA AUDUBONI (Townsend): Baird, Rep. p. 273.

San Gerónimo, November 1859. Both this species and *D. coronata* congregate at this season, and are generally to be seen feeding on the ground. I did not at the moment distinguish this bird from its near ally, *D. coronata*.

9. DENDRŒCA PENNSYLVANICA (Linn.): Baird, Rep. p. 278.

Coban, November 1859. In quite immature or winter dress, with the under surface pure white.

10. DENDRŒCA —— ?

Coban, November 1859. A single bird, which looks more like *D. pannosa* (Gosse) of Jamaica, than any other known member of the genus. More specimens are requisite to substantiate the species.

11. Dendrœca superciliosa (Bodd.): Baird, Rep. p. 289.

Dueñas, September 1859. I obtained but two specimens of this species, which does not appear to be common.

12. Basileuterus brasieri (Giraud): Sclater, P. Z. S. 1856, p. 292.

I have only observed this species in the Volcano. It has many of the habits of a *Setophaga*, the characters of which genus I have had more frequent opportunities of watching in the species *S. flammea* and *S. picta* than in the better known *S. ruticilla*. Like the rest of the *Mniotiltidæ*, they are restless in the pursuit of food, thoroughly searching every twig and leaf, even the bark of the main stem, for insects of every kind that may there lie hidden.

13. Basileuterus delattrii (Bp.): Sclater, P. Z. S. 1860 (May 8th).

Dueñas. Two specimens only were obtained of this species, as distinguished (*l. c.*) from its near allies, *B. rufifrons* of Mexico and *B. mesochrysus* of New Granada.

14. Euthlypis lacrymosa (Cab.): Mus. Hein. p. 19.

Alotenango, September 1859. Much nearer a *Setophaga* in its habits than anything else. Most of the *Setophagæ* may at once be recognized by the curious way they have of keeping the tail expanded and swaying it from side to side.

15. Vireo noveboracensis (Gm.).

Coban, November 1859. Only one example, agreeing with N. American specimens.

16. Chamæospiza torquata (Du Bus): Sclater, P. Z. S. 1858, p. 304.

Volcan de Fuego, September 1859. This bird I have only found in the Volcano. It skulks about the thick underwood, and scratches among the dead leaves for its food.

17. Buarremon albinuchus (d'Orb. & Lafr.): Sclater, Syn. Av. Tan. p. 24.

Coban, November 1859. A very shy bird.

18. Eucometis spodocephala (Bp.): *Chlorospingus spodocephalus*, Bp. Notes Orn. p. 23.

Vera Paz. Having obtained this species from Don Vicente Constancia, I am unable to say whether it is from Coban or the low lands.—O. S.

This bird is no *Chlorospingus*, as placed by Bonaparte, but a very close ally of *Eucometis cristata* of my 'Synopsis,' and perhaps hardly sufficiently distinct from it.—P. L. S.

19. EUPHONIA MINUTA (Cab.): Sclater, Syn. Av. Tan. p. 100.

Coban. I obtained only a single specimen of this *Euphonia*.

20. DENDROCOPS MULTISTRIGATUS, Eyton, Contr. Orn. 1851, p. 75.

S. Cruz, Vera Paz, December 1859. This is probably Mr. Eyton's species, as indicated above. It differs from the South American *D. platyrostris* (Spix) (which it greatly resembles) in having a longer, narrower, and paler bill.—P. L. S.

21. MITREPHORUS FULVIFRONS (Giraud): Sclater, Ibis, 1859, p. 442.

Dueñas. A single specimen.

22. CHRYSOMITRIS NOTATA (Du Bus): Bp. Consp. p. 516.

Volcan de Fuego, August 1859. It was on the edge of the deep ravine that divides the fire-cone from the other two of the Volcan de Fuego, in the stony, desolate waste lying on the eastern side of the last-mentioned cones, that I first met with this beautiful Goldfinch. I have since found it at Coban, and on the hills between San Juan Sacatipequez and Antigua, but did not obtain specimens from either locality. This is much more of a true Goldfinch than *C. mexicana*.

23. ICTERUS MENTALIS (Less.).

San Gerónimo, December 1859. One of the commonest of the many *Icteri* of this place.

24. CHORDEILES VIRGINIANUS (Gm.).

Coban, Vera Paz. These different species of Night-jars are not easily to be distinguished on the wing.

25. ANTROSTOMUS VOCIFERUS (Wils.).

Coban and San Gerónimo.

26. PETASOPHORA DELPHINÆ.

Coban, Vera Paz, November 1859.

27. HELIOMASTER LONGIROSTRIS.

Dueñas, August 25, 1859.

28. COCCYZUS ERYTHROPHTHALMUS (Wils.): Baird's Rep. p. 77.

Dueñas, September 2nd, 1859. This bird I shot in a willow-tree near the lake. It was alone, and the only one I have seen. Don Vicente Constancia has another skin of the same species.

29. BUBO VIRGINIANUS (Gm.).

Dueñas, August 18th, 1859, and San Gerónimo. This Eagle-Owl is a resident species at Dueñas, and I believe throughout the whole country. It is not uncommon: a favourite locality near the former village being one of the hill-sides, which is in most parts well covered with low trees and shrubs, and here and there a rocky precipice. I have met with the bird not unfrequently during the afternoon. At all hours of the night they make their proximity known by their deep cry.

30. COLUMBA FASCIATA, Say: Baird's Rep. p. 597.

Volcan de Fuego (6000 feet) and Coban. This Pigeon is common in the high forests of the Volcano.

31. ODONTOPHORUS THORACICUS (Gambel): *O. lineolatus*, Gould, Mon. Odont. pl. 32.

Volcan de Fuego, August. This is perhaps the commonest *Ortyx* found in the Volcan de Fuego. The ravines of this Volcano are localities very favoured by several species of the group. It is not often, however, that they are to be found actually at the bottom of the hollow, where the increasing shadow and height of the overhanging trees render the undergrowth of vegetation comparatively scanty, but most frequently near the top of either side, in places where a fallen tree or a slip of soil has laid bare a sunny spot. Such situations are sought for by these birds to bask and sleep in, like Partridges in a warm hedge-side. They are, however, true forest-birds, and are usually met with in small flocks of six or eight, probably the brood of the season.

When frightened, the whole bevy runs up the side of the ravine, and only when approached quite suddenly do they take wing. The consequence is (alas that it should be said!), that the sportsman is obliged to shoot them on the ground; and the only mode he has of quieting his conscience, is by a stretch of his imagination to suppose them "fur," and not "feather," and to take a running shot.

32. Eupsychortyx leucopogon (Less.): Gould, Mon. Odont. pl. 13.

San Gerónimo. A female, probably of this species, shot in the cane-field.

33. Macrorhamphus griseus (Gm.): Baird's Rep. p. 712.

San Gerónimo. A single specimen shot at San Gerónimo.

34. Phalaropus hyperboreus (Linn.).

Dueñas, August 1859. I have never observed but four birds of this family in Guatemala. They had apparently but just arrived, and were swimming slowly about on the lake, picking at the weeds, &c. They showed the usual absence of timidity attributed to these birds. No others followed these four, which may probably have formed a brood of the season. Since obtaining these, I discovered in the collection of Don Vicente Constancia a specimen of the same species; he also had another species, which will probably prove to be *P. wilsonii*. Both these had been procured from near the city of Guatemala.

35. Rallus virginianus, Linn.: Baird's Rep. p. 748.

Antigua Guatemala, September 1859. A single specimen only, a female, was brought me. It was killed in one of the cochineal plantations.

36. Corethrura rubra, Sclater and Salvin, P. Z. S. 1860 (May 16th).

Coban, Vera Paz, November 1859. Also in the collection of Don Vicente Constancia, and previously transmitted by Mr. Skinner.

37. Fuligula collaris (Don.): Baird, Rep. p. 792.

Coban, Vera Paz, November. Ducks frequent the river of Coban in some numbers.

38. Podiceps dominicus (Linn.).

Lake of Dueñas, October 13th, 1859.

39. Sterna frenata, Gambel: Baird, Rep. p. 864.

This skin I bought in Coban, and am not sure where it was procured.

XXXIV.—*Note on the Egg and Nestling of the Californian Vulture.* By Philip Lutley Sclater.

(Plates VIII. and IX.)

Mr. J. H. Gurney has kindly supplied, for the use of this Journal, the two accompanying plates, which represent the nestling and egg of the Californian Vulture (*Cathartes californianus*). They are copied from drawings (made by Mr. Reeve of the Norwich Museum) of the specimens (forwarded to Mr. Gurney by his correspondent, Mr. A. S. Taylor, of Monterey), which have already been alluded to in these pages*. The circumstances of the discovery of the two nests, one of which contained the young bird, supposed to be about from five to seven days old (Plate VIII.), and the other the egg (Plate IX.), having been already given, as also a sufficient description of the specimens, it is not necessary to repeat them. But it may be as well to remark, that in Dr. Brewer's valuable work on 'North American Oology' (p. 7), the egg of the Californian Vulture is described, from a drawing of a specimen said to have been laid in confinement at the Jardin des Plantes, as somewhat different from the one represented here. The dimensions there given ($3\frac{14}{16}$ by $2\frac{12}{16}$) would indicate a considerably smaller egg than the present specimen. The ring of reddish-brown blotches in the egg of the Jardin des Plantes is perhaps of less significance, as many of the *Vulturidæ* lay sometimes spotted and sometimes colourless eggs (see Mr. Salvin's remarks on the eggs of *Gyps fulvus* in this Journal for last year, p. 179). But it is certainly a reversal of what is generally the case, to find a white egg laid by a Vulture in a wild state, and a coloured egg laid by a bird in confinement; and, on the whole, it would be well not to place too much confidence in the drawing spoken of by Dr. Brewer.

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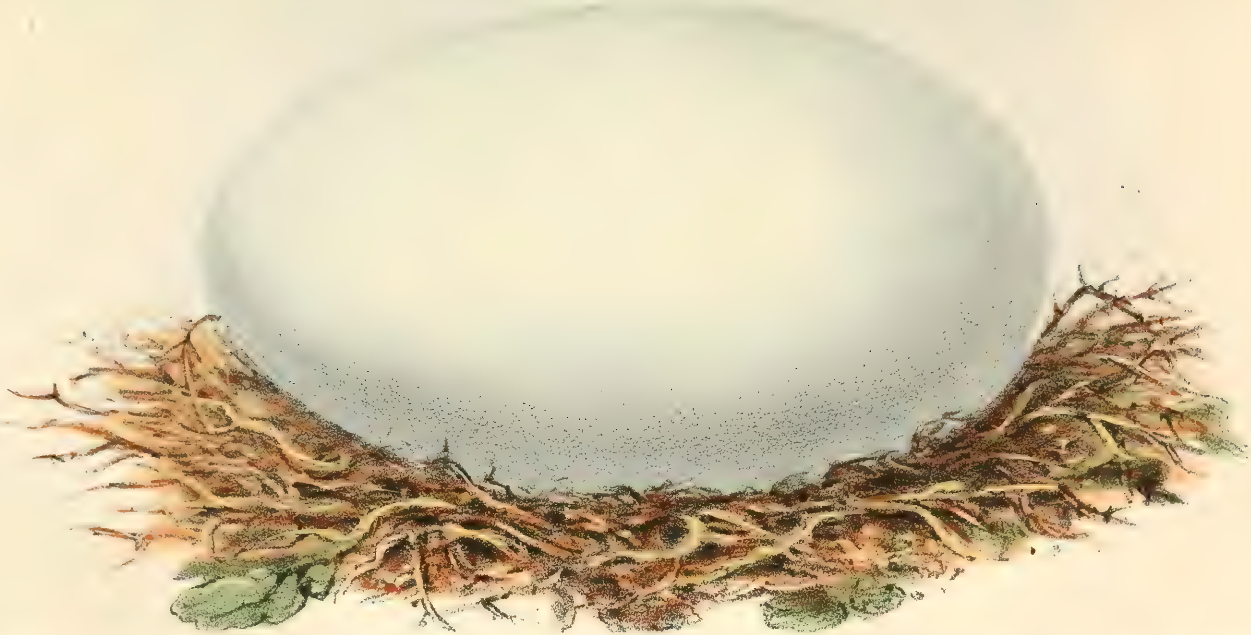
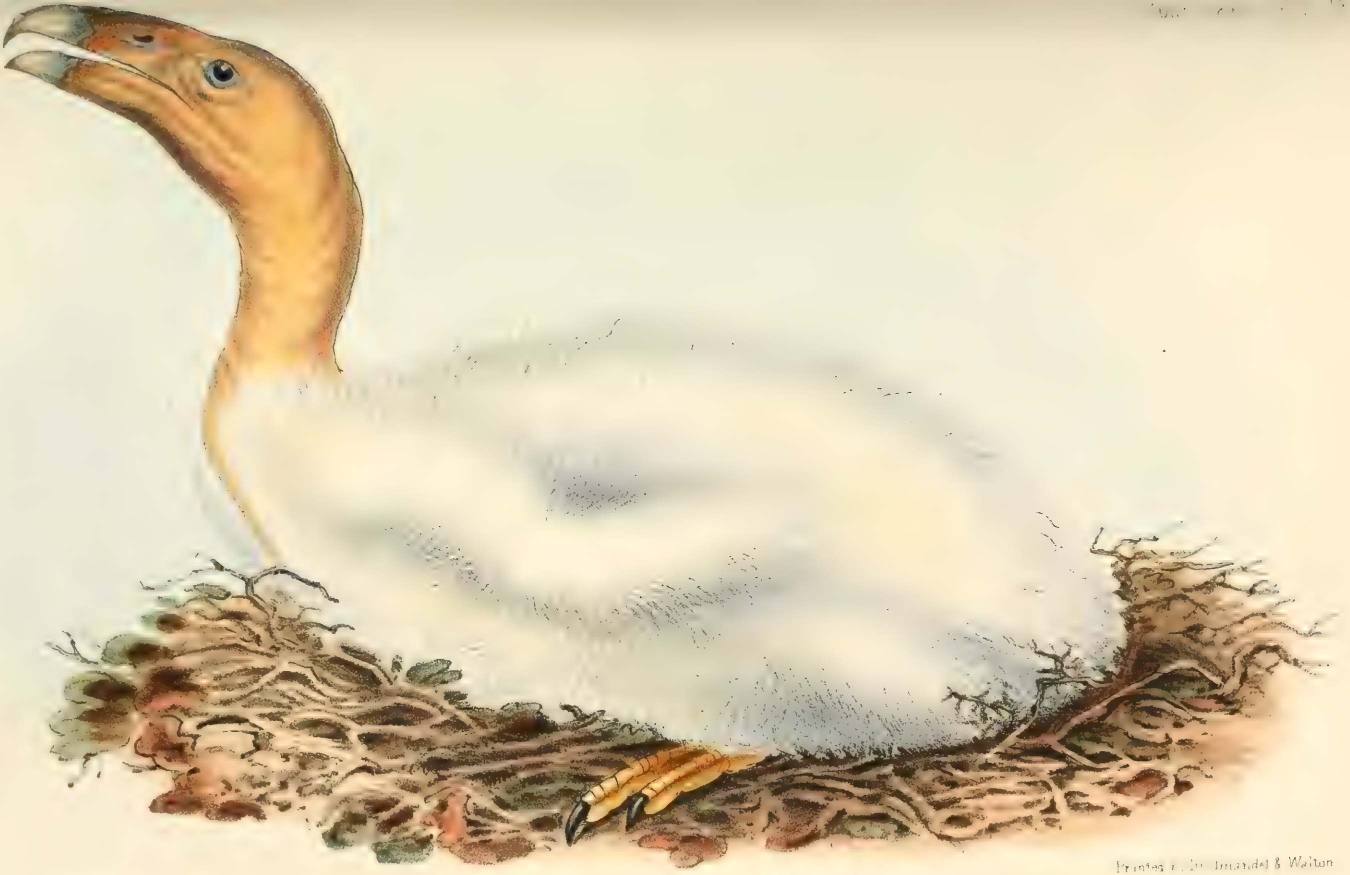
* See 'Ibis,' 1859, p. 469.



In Stone by J. Jennens

Printed by Hullmandel & Walton

EGG OF CATHARTES [illegible]



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CATHARTES CALIFORNIANUS, Juv.

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XXXV.—*Ornithological Notes from Mesolonghi and Southern Ætolia.* By W. H. Simpson, M.A., F.Z.S.

The two great rivers of Western Greece, the Aspro-potamo (*Acheloüs*) and the Phidaris (*Evenus*), which drain the highlands of Ætolia and a portion of the more distant Epirus, finally emerge from the mountains at either extremity of the range anciently called *Aracynthus*, though now a variety of names are assigned to particular blocks of that mountain. The alluvial deposits from these two rivers, more especially from the Aspro-potamo, whose volume of water is very great, appear to have formed in the course of ages the extensive tract of low marshy ground which constitutes the south-west angle of Continental Greece. This district is unequally divided by the great lagoon of Mesolonghi, which, having an average depth of less than four feet, may be justly considered as forming a part of the great alluvial tract those rivers have deposited in the deep waters of the Ionian Sea. The lagoon is studded with groups of flat muddy islets, and is protected from the sea itself by a sandy spit many miles in length, and, where this terminates, by a chain of small islands of a similar character. Towards the east, where the vulture-haunted cliffs of Mount Varassovo (*Chalkis*) mark the limits of the plain in this direction, the Phidaris has already, within the historic period, extended its own delta by filling up several small lakes. The lower portions of this delta constitute at present a damp jungle, very difficult to penetrate, which is full of tall poplars, willows, and plane trees, and where the water is up to the ankles or the neck, according to the state of the river. This jungle was probably the haunt of the Calydonian boars, as the ruins of Calydon, the ancient capital of Ætolia, are on the slope of Mount Aracynthus, just over the spot where the river emerges into the low grounds. From these ruins it is about two hours' walk to the town of Mesolonghi, through a fertile and partially cultivated plain.

The town itself is on a flat peninsula, almost flush with the lagoon, and cut off from the mainland by a muddy ditch, which is a favourite resort for *Tringa subarquata* and other small waders during the spring migration; *Charadrius cantianus* may frequently be seen running about close to the parade-ground, which, however, is generally under water during the winter months. North of Mesolonghi is a narrow fringe of level ground squeezed in between the lagoon and the steep slope of Mount Aracynthus. Wherever the springs from the subterranean channels of this mountain burst out, a marsh is formed, generally extending to the lagoon itself; and, as neither these waters nor those of the lagoon are ever frozen, the number of wild-fowl to be found here in winter is very great.

The delta of the Aspro-potamo is much more extensive and varied in its character than that of the Phidaris, as it comprises within itself a number of small rocky hills, exactly resembling the islets so numerous on the west coast of Acarnania (the ancient *Echinades*), which may some day be joined to the Continent, as these have been. Within the historic period a great lake has here been converted into a swamp, more or less accessible according to the state of the water, and there are vast tracts of reeds and sedges intermingled with watery meadows and slippery maize-fields occurring at intervals throughout its whole extent.

It may readily be understood that such a district as this between the two great rivers, including of course the outlying portions of their respective deltas, is eminently favourable to water-fowl, both those species which frequent the salt and those which like the fresh water best. Waders, Geese, Ducks, Gulls, and Terns of many species are here to be met with at different seasons of the year, and when a hard winter drives them down from the marshes of Dalmatia and Albania, their numbers are immense. A sportsman will meet with all sorts of wild-fowl, from a Jack Snipe to a Pelican; and an ornithologist will take still further delight in observing the numerous Harriers, Eagles, and other birds of prey, which are sure to congregate where their natural food is so plentiful. The thickets on the alluvial plains are equally favourable to many of the smaller birds, especially to numerous species of *Sylviadæ*. The gardens and vineyards are full of that most beautiful bird, *Emberiza melanocephala*; and the stony slopes of the lower hills are enlivened by the gay colours of the Blue Thrush (*Monticola cyaneus*) and the restless little Russet Wheatear (*Sax. stapezina*). Towering above all the mural precipices of Varassovo (*Chalkis*), Aracynthus affords an appropriate abode for the numerous Raptores which look down upon the wide extent of forest, morass, and lagoons beneath them.

Of the Vultures, *V. fulvus* is the most common; indeed it may be said to be numerous, having extensive breeding-places in Mount Varassovo and in the Klissouras of Aracynthus. The former mountain is a great favourite with them, as it commands a most extensive prospect, not only over the Mesolonghi district, but also over the great and varied plain of Northern Elis in the Peloponnesus. The winter of 1859–60 was a good one for Vultures, as cattle died in immense quantities owing to a want of grass; indeed there was more work for them than they could get through, in spite of their numbers.

Throughout the long range of Aracynthus, the face of the mountain towards the lagoon abruptly terminates in a line of precipices of moderate depth near Mesolonghi, but increasing as one approaches Ætolia and the head of the lagoon itself. I am not sure that the Griffon breeds in these; but the mountain is near the latter town penetrated, at right angles to this line of lower precipices, by three tremendous fissures, which we used to know as the Grand Gorge, the Little Klissoura, and the Great Klissoura. The two first pierce deeply into the heart of the mountain, but the latter cuts completely through it into the great plain of Agrinion, the richest and most important district of Central Ætolia. In all three Klissouras the Griffon is at home. My companion, Dr. Krüper, with the assistance of his German servant, took two or three nests in February last out of the Grand Gorge, where also he noticed *Gypaëtus barbatus* and *Strix bubo*, the latter probably breeding. As the Greek shepherds could not be induced to venture down the rocks in search of eggs, Krüper and his man had to do it themselves. The plan they adopted was, that one should hold the rope whilst the other descended hand under hand: not difficult so far as the descent is concerned, but by no means easy for getting up again. About a week before I joined him, they were working at a nest in the Little Klissoura, when Krüper, who was at the top, felt the rope suddenly slacken, and heard a cry from beneath. It took him nearly an hour to reach the foot of the precipice, and there he found his unfortunate comrade, severely injured, but still alive. No one knew how the accident had happened, as the man himself was unable to give any account of it up to the time when I left Mesolonghi, where he lay in the military hospital, with a fair chance of recovery. In such a lonely spot some time elapsed before assistance could be obtained, and then the natives haggled over the bleeding and almost senseless body for the amount of the reward they were to receive on carrying him down to Ætolico.

The Lammergeyer (*Gypaëtus barbatus*) is not numerous in this mountain. Only one pair was actually recognized, though a single adult bird was occasionally observed in the Grand Gorge, where, amongst the holes high in the upper tier of cliffs, he may have had an eyry. This is decidedly a scarce bird throughout Western Greece: in all the Raptorial districts I have visited, its proportion to *V. fulvus* is very small indeed; yet, wherever there is any large colony of the latter, a pair of *G. barbatus* may be looked for, and generally in the deepest hole on the shady side of the most inaccessible rock. He is not a demonstrative bird, like the Griffon, who may be seen sailing about at a great height in the air, sometimes alone, but more often in troops of from half a dozen to fifty, revolving in endless circles round each other, that no corner may remain unseen. The Lammergeyer, on the contrary, may be observed floating slowly at a uniform level, close to the cliffs of some deep ravine, where his shadow is perhaps projected on the wall-like rocks. If the ravine has salient and re-entering angles, he does not cut across from point to point, but preserves the same distance from the cliff; and when he disappears in any lateral fissure, you feel sure of the very spot where he will emerge on turning the corner of the precipice. Marrow-bones are the dainties he loves the best; and when the other Vultures have picked the flesh off any animal, he comes in at the end of the feast and swallows the bones, or breaks them and swallows the pieces, if he cannot get the marrow out otherwise. The bones he cracks by taking them to a great height, and letting them fall upon a stone. This is probably the bird that dropped a tortoise on the bald head of poor old Æschylus. Not, however, that he restricts himself, or the huge black infant that he and his mate are bringing up, in one of the many holes with which the limestone precipice abounds, to marrow, turtle, bones, and similar delicacies: neither lamb, hare, nor kid come amiss to him, though, his power of claw and beak being feeble for so large a bird, he cannot tear his meat like other Vultures and Eagles. To make amends for this, his powers of deglutition are enormous. The Greeks believe he will swallow and digest anything; but the stories I have heard on this point are too marvellous to be mentioned in the 'Ibis'*. The character of the Greeks for mendacity is well known: any naturalist travelling in this country will find their information as unreliable as their assistance is unwilling. I once saw a mature bird of this species which had evidently swallowed a bone, or something uncommonly indigestible, close to the *abattoir* at Athens. He was in a very uncomfortable attitude, and appeared to be leaning on his long tail for support. After riding round in continually decreasing circles till within ten yards, I dropped off horseback and made a rush at him; but he just managed to escape, and then rising slowly till about the height of the Acropolis, made off towards the Gorge of Phyle, where there is an eyry. The Lammergeyer has an extremely ugly countenance; this becomes perfectly diabolical when he is irritated and shows the bright red round his eyes. Altogether, what with his black beard, rufous breast, and long dark tail, he is an awful-looking beast, and has the reputation of committing divers evil deeds,—such, for instance, as pushing lambs and kids, and even men, off the rocks, when they are in ticklish situations. Nevertheless he is a somewhat cowardly bird, has a feeble querulous cry, and will submit to insults from a Falcon not a fourth his size or weight.

The only inhabited nest of this species we discovered was situated in the face of the upper tier of precipices which form the re-entering angle of the Great Klissoura, looking due north, and facing the northern arm of that extraordinary fissure; of which I ought to attempt a short description, as, besides the Lammergeyer's nest, it contains by far the largest colony of *Vultur fulvus* in these regions.

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* One man averred that an old axe-head had been found in this bird. If so, the meeting of the marrow-bones and cleaver must have been affecting in the extreme.

In all mountainous countries it is usual to find passes across the lowest part of the ridge of any chain; but here, a mountain 2000 feet high, and between two and three miles wide, is split asunder from the top to a depth of 1500 feet by an irregular chasm, consisting of two great arms, one of which, pointing W.S.W., opens out upon the plain and lake of Ætolico; and the other, pointing nearly due north, debouches on the forest valley which leads to the plain of Agrinion. On entering from the westward, the first thing that strikes the attention is a semicircular sweep of precipices high up on the left, provided with holes, and a place of call for a small community of Griffons. Beyond this for a short distance the rock is so steep that no large bird could breed upon it; the very summit is crowned by a few of the Mountain Pines of Greece (*Pinus picea*?). On the right the precipices increase in height towards the corner of the gorge, which is a little more than halfway through. They consist here of two principal tiers of hard limestone rock, dipping at a moderate angle from the anticlinal axis of the mountain, and consequently increase in elevation the nearer we approach the centre. Our nest of *Gypaëtus* is in a cliff belonging to the upper tier, just before we arrive at the great gap which marks the head of the extreme corner of the gorge. Any one standing on the small path at the bottom, after making the slight ascent which marks the summit of the track, will have this cliff more than 1000 feet above him on the right hand; and on the same side he will have a good view of the two steep and gloomy fissures through which it is just possible to attain the heights above. Looking back through the ravine he has just been threading, he will get a bird's-eye peep of the lake and plain of Ætolico glistening in the sunshine, whilst the pools at his feet are probably frozen dry in the month of February, so chilly is the sunless spot. On his left hand, far down the northern arm, he will catch a glimpse of the fort which commands the entrance to this most notorious pass; and directly in front he will see the mural precipice which bounds the northern arm in one continuous wall of rock for upwards of a mile at an elevation of 1000 feet. The great colony of Griffons inhabits the ledges and caverns of this extensive precipice. The principal "club" or place of call is in an enormous hole exactly opposite the western arm, which the sun bakes powerfully of an afternoon, and where many birds from the less favoured localities look in to have a talk with their neighbours.

It was on the morning of the 1st of March that Dr. Krüper and myself, after examining the cliffs from this spot, ascended one of the fissures before mentioned to determine the exact position of the Lammergeyer's nest. Following our usual plan, we stationed ourselves at different points, whilst the Doctor fired his gun. Nothing appeared, and we were just going away, when the Lammergeyer was seen quietly floating back to its nest, which was so exactly over my head, that I had not noticed her as she quitted it after the discharge. Viewed from beneath, the place seemed somewhat awful; still we had hopes: yet how to get above it was not so clear. However we summoned our followers, and, having engaged two shepherd boys to show us a goat track to the top, set off in high spirits at the important discovery. This being the shady side of the Great Klissoura, there is a considerable quantity of vegetation wherever the rocks are not actually perpendicular, and even these are in some places richly covered with ivy at their base. Goats are thus enabled to scramble up and down to certain ledges between the tiers of the precipice, where they nibble the leaves of the Tree-Sage, Prickly Oak, Dwarf-leaved Holly, and branches of the Wild Olive and Terebinth (which are cut down on purpose), besides any other green food they can get. Up one of these most difficult tracks our little guides now led us, displaying on the way such agility and daring as surprised me, considering that hardly any reward will induce them to go down into a nest. They have, however, no proper idea of using a rope, and once off their feet lose all their courage. Just as we were at the most ticklish spot, two Greeks suddenly appeared on the edge of the cliff above us, and requested the boys not to show us any further, as the shepherds did not wish strangers to become acquainted with the passes.

All these fellows up here are, or have been, brigands to a man, and, therefore, having bad consciences, see in every stranger an agent of police come to levy some unpaid tax, or to apprehend them for any little "difficulty" in which they have been engaged. But hearing we were the insane Europeans who went about that country collecting eggs, they withdrew their opposition and permitted us to continue the ascent. A well-directed stone would have sent the whole party to perdition, as at that time we were clinging like flies to a wall. One of the volunteers did make himself scarce at this point, not caring to face it any more.

The Great Klissoura, till within the last three years, was the most noted place in all Western Greece for robberies. Whole parties have been murdered here, and frequent combats have taken place since the War of Independence between the troops and the brigands. During that period and up to the year 1857, no less than 1200 people have lost their lives in these affairs, as I was informed by the sergeant in command at the fort. Fine times these for our friends the Griffons! No wonder there is such a thriving community close at hand. To the present chief of the police at Mesolonghi the credit of putting a stop to such a state of things is due; but the same people are still here—those savage Ætolians, who, in Thucydides' time, were said to be "rude of tongue and eaters of raw meat" *—men that swagger about with long guns and a bellyful of pistols, perpetually carrying arms, as did their predecessors in these same mountains at the beginning of the Peloponnesian war, long after the other Greeks had discontinued the practice †.

These two fellows heard our proposal to take the Lammergeyer's nest with a sort of suspicious incredulity, though, to do them justice, this reserve gradually wore away, and they even volunteered to produce a man who would go down. But his courage quickly evaporated as soon as he saw the place, and so indeed did mine when I thought of the bungling crew with whom I should have to work. As an instance of the want of

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* ἀγνωστότατοι δὲ γλῶσσαν καὶ ὠμοφάγοι εἰσὶν, ὡς λέγονται (Hist. iii. 94).

† τό τε σιδηροφορεῖσθαι τούτοις τοῖς ἠπειρώταις ἀπὸ τῆς παλαιᾶς ληστείας ἐμμεμένηκε (*ibid.* i. 5).

observation in these shepherds, I may mention that not one of them knew of the nest until we pointed it out, although there is every probability that a pair of these birds have bred somewhere in the cliff from time immemorial. Dr. Krüper and myself, with the assistance of my Italian servant, took the measure of the position as well as we were able. From this it appeared that the hole containing the nest was 70 feet below the edge of the precipice, and about 100 feet above the point where a plumb-line let fall from the top touched the talus, which sloped away from the base of the cliff at an angle of 60° towards the edge of the second tier of precipices. The chief difficulty arose from the cavity, or rather the mouth of it, being some 6 or 8 feet inside the plumb-line—so much did the upper part of the cliff overhang the rest of it. This caused our defeat, as the person let down would still have been at that distance from the edge of the hole, and must either have swung himself in, or have trusted to some more complicated apparatus than our party could manage. The conduct of the sitting bird, when driven off, made us think there was an egg not very far from being hatched, though when it became evident that the siege was to be raised, we tried to persuade ourselves it must be a young one. But the view which this cliff commands was some compensation after all our trouble. Forming almost the highest part of the upper tier of precipices on the south side of the western arm of the Klissoura, it faces the salient angle which divides the two arms from each other. The entire depth of the intervening gorge at this point is about 1200 feet, yet so narrow that the Lammergeyer could cross it in half a minute, and then sit on the most projecting rock of the salient angle watching our proceedings. To us wingless bipeds this would have been a task of three hours at least. The mule-path looks like a thread below, dotted occasionally with a few travellers and their beasts of burden. Should one of these break down, his owner divides the load amongst the others, skins him if he has time, and the carcase, which has been watched by scores of eager eyes, is very soon transferred to the cliffs above. Such a community of Vultures as there is throughout the Klissoura would appear to disgust the more noble Eagles and Falcons, or perhaps the place is too confined for them. The

Golden Eagle (*Aquila chrysaëtos*), which is scarce throughout the district, I never saw here. The Spotted Eagle (*A. nævia*) prefers the woodlands of the plain; and Bonelli's Eagle (*A. bonellii*) appears to delight in the lower precipices facing the more open country. The Lanner or the Peregrine may breed here: we know that the former (*Falco lanarius*) occurs in the Parnassus. The Kestrel (*F. tinnunculus*) is common enough, and a few Ravens share with the Vultures the darker recesses. Neither the Chough (*Pyrrhocorax graculus*) nor the Alpine Chough (*P. alpinus*) are found, though both occur—the latter plentifully—in the Parnassus and Taÿgetus; but there is a colony of the White-shouldered Jackdaw (*Corvus collaris* *, Drummond), which breeds about the western mouth of the gorge.

Leaving the gloomy depths of the Great Klissoura, where one never feels quite sure that the whistle of a bullet may not accompany the report of the long Greek gun which occasionally awakens its echoes, let us transfer our attention to another part of Mount Aracynthus facing the open country. Here the more accessible cliffs which form the western buttresses of the mountain overlook the lagoon of Mesolonghi, the alluvial plain of the silver-eddying (ἀργυροδίνης) Acheloüs, and the distant islands of the Ionian Sea. The line of precipices is not continuous; between the Grand Gorge and the Little Klissoura there are three sections of an average height of about 130 feet. They spring from a very steep talus, which is covered with their fragments, and slopes rapidly to the narrow strip of level ground bordering the lagoon. Most of the waters from the upper parts of the mountain are collected into two subterranean sources, one of which gradually oozes up through the tangled olive-grove opposite the mouth of the Grand Gorge, whilst the other forms a copious fountain beneath a small spur of rock which comes down to the edge of the lagoon itself,—thus forming a sort of freshwater marsh by the side of the salt lake. The temperature of this spring is much raised after heavy rains. It is always, especially in a morning, a favourite haunt of ducks, which are more numerous here and on the adjacent parts of the lagoon than anywhere else. Not far from this spring is a group of huge stones which have fallen from the rocks above—a favourite spot for myself and Dr. Krüper to sit and watch the precipices on one side and the lagoon on the other. The stones themselves were not devoid of interest to an ornithologist, as we had discovered, on the 1st of June, 1859, a nest of the Blue Thrush (*Monticola cyaneus*) in a hole near the top of the largest stone about 10 feet from the ground. The nest resembled the well-known one of *Turdus merula*, but was more loosely constructed and shallower. This, however, would arise from the bird having to accommodate itself to the shape of the cavity in which the nest was placed. The eggs are of a pale greenish blue, very delicate, and without any spots. The allied species (*M. saxatilis*) does not occur so low down as this: it is said to be not uncommon in the higher districts of Greece. On the opposite side of the same stone was a nest of that most eccentric bird, *Sitta syriaca*; it had been repaired once or twice, but at that period was not inhabited. The nest was plastered over the mouth of a small cavity, and, were it not for the little round entrance-hole, would be very difficult to distinguish from the numerous structures of a species of Ant which are thickly stuck over the face of the rock, and at a distance resemble in size and appearance the nest of *Sitta syriaca* itself. But the greatest curiosity of all was to be seen under a large flat slab which projected enough to afford convenient shelter during a shower of rain. This was a nest of *Hirundo rufula*, which had been broken at one end and consequently abandoned by the bird. Meanwhile a Nuthatch had come and repaired the damage, possibly with the intention of appropriating the nest. The difference in the workmanship, and to a certain extent in the materials, was very apparent when the two were in juxtaposition. In shape, the nest of *Hirundo rufula* is so different from that of any other European bird, that this proceeding on the part of the Nuthatch was still more extraordinary.

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* See Proc. Zool. Soc. 1846, p. 43.

We will, however, dismiss these two birds for awhile, and take a survey through the telescope of the cliffs above us. These consist of the metamorphic limestone common in Greece, and they possess peculiarities which always seem to me to indicate a Raptorial locality. The upper edge is generally very hard, often overhangs a little, and has a bluish-grey tinge, partly the effect of exposure and partly the natural colour of the rock. Underneath this, with more or less regularity, occurs a band of softer rock, which wears externally a rusty-yellow colour and is very friable in its nature. In this band are found most of those holes and fissures and horizontal excavations which form such comfortable quarters for the larger birds of prey. In the more lofty precipices occur regular caves extending some way into the mountain; and there are always plenty of nice snug holes (just big enough to contain a nest), which open out upon a covered ledge common to all the families in its locality. Wherever there is a covered ledge or corridor of this sort in the Griffon colonies conspicuous for its extent and sunny position, we may expect to find established the "club" of the community. There are always a considerable number of young unmarried Griffons, known to some naturalists as *V. kolbii*, who perhaps form the nucleus of the institution; but these are joined at times by the elders of the tribe. On a nice sunny afternoon they may be seen dropping in by ones and twos at a time, and, when a quorum is established, proceed to their business, whatever that may be. Some sit with their wings completely stretched out, as though they were hanging themselves out to dry after a wash; others appear to be taking a nap after dinner; but there are always a few busy ones putting their heads together, who are probably engaged in discussing the price of meat, or in arranging one of those grand expeditions during which they beat the country in such force. But we are at present looking at the cliffs above Ætolico, where, although one or two birds occasionally sail past, there is no "club" of Griffons. Here we observe another peculiarity common to the limestone precipices of Greece, viz., the deposits of white lime which are left in places on the face of the cliff by water, after it has percolated the calcareous strata of the mountain. When seen at a distance, this looks so exactly like the discharge from the nest or sleeping-place of a large bird of prey—more especially if, as is often the case, it happens to be under a likely-looking hole—that one is apt to suppose these nests much more numerous than they really are. Birds doubtless take advantage of this, as amongst so many white marks the traces of their own discharge may possibly escape detection.

In the same way *Sitta syriaca* hopes that its own bit of plaster sticking to a rock may pass muster amongst the many structures of a species of Ant.

We had long known that these cliffs were frequented by a pair of Bonelli's Eagles (*Aquila bonellii*), as also by a pair of Sea Eagles (*A. albicilla*), besides Eagle Owls, Griffon Vultures, Ravens, and Kestrels. Bonelli's Eagle we were sure must be a very early breeder, as Dr. Krüper had found a nest hatched off in the beginning of April 1859 in the same line of cliffs some miles to the southward, and although this was only the 26th of February, it was clear we could afford to lose no time. As we scrambled up towards the foot of the precipice the male Bonelli was caught sight of, evidently on the look-out for us, as we had been on the look-out for him. He had seen us long before, and now flew away to give notice of our arrival. After examining several likely places, Dr. Krüper at length pointed out a nest in one of the smaller holes which was plainly visible from the base of the precipice. We then stationed ourselves at separate points; but when the gun was fired, out started the female Bonelli from another nest which had escaped our observation. A few sticks only projected from the deep longitudinal fissure in which it was placed. This Eagle when flying shows a whitish band on the back, just above the base of the tail, which was easily seen on this occasion as she turned on her side in the air and thus presented her back towards us. In colour the whole plumage was very light. On finding that we did not stir, she came back very boldly after an absence of two or three minutes, and entered her nest, where, as she settled down, we again lost sight of her. It was agreed to defer the "assault" until the following day, as ropes would be necessary. The cliff was carefully examined both below and above, that we might lose no time during operations.

Early on the morning of February 27th, the besieging force marched through the town of Ætolico, where it created considerable excitement on account of the accident to Krüper's German servant a few days before. Some of the "loafers" accompanied us to witness the proceedings; but all but two dropped off during the ascent, and these two would never come near enough the edge of the precipice to be of any use. My Italian servant carried one rope; a Greek gunsmith—our only volunteer—carried the other; Krüper and myself completed the party. It took us two hours to reach the top of the line of cliffs, and then we had to scramble down a rough gully to a point where a wild olive-tree grew out of a crack in the rock. This tree was the principal mark we had taken from below, where it seemed to be a few feet to the left of the line where the nest should be found. Underneath this the precipice broke sheer away to the bottom, but from the edge of it nothing could be seen; and even by getting into the tree and hanging over as far as was safe, we were none the wiser. Meanwhile some one threw down a stone, and out darted the bird, taking a downward course as before, so that she was two or three gunshots off before we saw her. The light-coloured band on the lower part of the back was very noticeable on this occasion. Neither of the birds made their appearance again during operations. We then cut away the scrub to make standing room for those who had to hold the rope, and my servant was placed in front to receive orders. Everything being ready, they lowered me a few feet over the first crest of the precipice to a ledge two or three inches wide, where I could just find standing room. All doubt was now removed: there lay a pair of whitish-looking eggs—a long way farther below—upon the flattened bowl of an immense oval nest, seven-eighths of which rested on a platform inside the great fissure: this fissure concealed it from observation and protected it from the weather. If the Eagles had searched the whole line of precipices, they could not have found a more suitable spot than this snug corner at the mouth of the cave, or one indeed more interesting and curious in many other respects. The outermost branches of the wild olive-tree hung over the top and rustled in the brisk breeze, but below no draught could come: the sun baked fiercely upon the rock beneath, where a wild fruit-tree had put out its pretty pink blossoms about the same time that the Eagle had laid her eggs. It was hot summer here, yet winter a few feet above. And then, what a prospect must these Eagles enjoy of the wide domain over which they reign supreme! The compact island of Ætolico, completely covered by the town, lies almost immediately underneath their eyry. The natives may be seen promenading on the bridge in all the pride of tasseled fez and snowy fastanella. The frequent explosions in the town to-day proclaim it one of the fêtes of the Greek Church. To-night and to-morrow they will take their fill of fish, after which they are allowed to make themselves sick on bad butter, made up into various cakes, and abominations such as no other country could produce, and then no more animal food (shellfish and roe excepted) till Easter. But the Eagles are indifferent to all this. Their eyes doubtless are chiefly fixed on the two great packs of ducks now resting so quietly on either side of the long bridge, and over the waters and reedy shores of the upper lake, which is their own especial beat. If this is not enough, they overlook the whole western arm of the great lagoon of Mesolonghi, the Pelican Islands, and the immense and varied delta of the Acheloüs, with its swamps, its pastures, and its corn-fields,—broken in front by the olive-covered hill of Katza, abounding in pigeons, and beyond the river by the eminences which contain the modern Ratokki and the ruins of Œnia. After being lowered to a level with the nest, the only difficulty was to spring across the chasm separating the platform on which it rested from the cliff beneath the wild olive-tree. This done, I was in possession, and able to make a closer inspection of the nest itself, which consisted principally of branches of wild olive, terebinth, and thorn, arranged according to their size. There was no lining of wool, as is usual in Eagles' nests, but the eggs lay on a thin layer of olive-leaves. The eggs themselves, which I retain in my collection, are slightly unequal in size. The larger is of a smooth texture and bluish-white ground-colour, very sparingly marked with rust-coloured spots and minute dottings. The smaller one is of a rougher texture, in colour a dirty white, and without any distinct markings: it appears to have been laid the last. Further up the cave is a stone, on which the bird not occupied in incubating the eggs was evidently wont to sit and watch its mate. There were no bones or other remains indicating the nature of their food, though I fancy hares and partridges (*Caccabis saxatilis*) form no small portion of it. On our return down the mountain, Dr. Krüper and myself had a good view of the pair. The falconine character of their flight was very obvious as they dashed about in the air at a great height, sometimes appearing to make a summerset backwards (reversing the action of the tumbler), in the excess of their indignation against the robbers who were looking at them.

The first nest which we discovered in this line of precipices most probably belonged to the pair of Sea Eagles that haunted the upper lake. There were several of these birds about, but the others were mostly immature ones in the dark plumage. They fly low over the water with that lumbering heavy flight peculiar to the species. If they come near the grand army of ducks, all the outlying pickets are called in, and sometimes a general retreat takes place, but always in order and without much appearance of alarm. It is not to be supposed that all the birds of this species we see here are breeding; but there are one or two undoubted eyries in the district, and these chiefly in the enormous trees that rear their heads above the almost impenetrable jungles near the lakes of Agrinion and the embouchure of the Phidaris. In the latter place there is one to which Dr. Krüper ascended in the month of May 1859. It was in a good state of repair, but contained no young,—nothing living, in fact, but a few sparrows that had built their nests with true passerine impudence in the many snug little berths which its vast circumference afforded. We took this to be an indication that the establishment was not occupied, when, just as the Doctor was coming down, a great black Eagle flew over our heads. A Golden Eagle! said we all. But our Italian solved the question by putting some shot into him, as he passed again, when he proved to be *Aquila albicilla*, in the plumage of the second year: the sex I forget. Whether the Eagle inherited this establishment from his deceased ancestors, or had found it and put it into tenantable repair, is a fact we shall never ascertain: this much is probable, that he looked upon it as his habitation, that he intended to get mated, and that in the course of a year or two more, if an untimely fate had not befallen him, he would have taken his share in the production of a pair of spotless eggs, for the benefit of the next oologist who should have the luck to find the nest and the pluck to ascend to it.

In the recesses of these marshy forests, where the rate of travelling is less than half a mile an hour, the Spotted Eagle (*A. nævia*) also finds a congenial abode. There are generally two or three pairs in the forest to which I am alluding, and one is continually reminded of their presence by the shrill cry they utter. During the last winter I noticed a few which frequented the marshes of Ali Tchelebi across the gulf, and also the extensive forests in the plain of Agrinion. If the winter be hard, they may quit continental Greece entirely, as they feed very largely on reptiles, especially on frogs. Towards the end of February an accession to their numbers was apparent, the birds being generally seen coasting the marshy shores of the lagoon on their way northwards. Those few which winter here possibly join this migration, and their places may be occupied by others coming from further south. This, however, is merely conjecture; certain it is, that towards the beginning of May a nest or two will be found in the jungle which covers portions of the delta of the Phidaris at the foot of the unscaled precipices of Mount Varassovo. To this place (dismissing for a moment our Eagle) I would again direct attention, as one dear to the eye of an ornithologist. The tall white stems of the ash and the poplar, and the huge trunks of the wide-spreading plane-tree shoot out of a mass of tangled foliage, and support—sometimes from their topmost branches—rich curtains of dark green ivy, and festoons of the creeping vine that fall in graceful folds and pendulous lines, to mingle once more with the general mass below. Here you may see the Golden Oriole, the Jay, the Roller, and the Bee-eater, enlivening the verdure of the woods by the brilliancy of their colours, whilst from some hollow tree will start an Eagle Owl, only to hide himself in yet obscurer depths. Woodpeckers of more than one species are not uncommon, to judge by the holes they have drilled in the trees; and amongst the Tits it would not be difficult, perhaps, for a careful observer to discern *Parus pendulinus* and *Parus lugubris*, the former of which undoubtedly breeds in similar localities. A stray pair of Blackbird and Song Thrush, out of the flocks that frequent this place in winter, may remain behind to breed; but the duties of the sylvan chorus are performed by innumerable Warblers, *S. elaica*, *S. olivetorum*, *S. luscinia*, *S. altisonans*, and many others, which however prefer the bushy outskirts and shun the depths of the forest, as does also the conspicuous *Lanius minor*, which, next to the Woodchat, is the commonest Shrike of Greece. In winter this forest is a paradise for woodcock, as are the marshes, which interlace it, for snipe and wild-duck; but many parts are inaccessible except to the wild pigs and jackals, of which there is no lack. This makes our visit to the nests of the Spotted Eagle a somewhat difficult task.

Aquila nævia constructs a very small nest for the size of the bird: it is generally well concealed in the fork of a large tree, so that it might very easily escape observation. The exterior is neatly rounded off, and has none of those great branches sticking out which are often seen in nests of other Eagles. Inside it is comfortably lined with wool. The eggs vary considerably according to the age of the bird, but are generally handsomely marked with large spots and blotches of a rust-colour on a whitish ground. Of two which I have in my collection from the same nest, taken May 4, 1859, one has an exceedingly rich rust-coloured zone, streaked with darker shades, irregularly covering about one-third of the egg towards the smaller ends, the ground-colour being of a yellowish-white. The upper part of the egg is also marked with spots and blotches of the same colour, each one being distinct, and not in the least smudged so as to spoil the ground-colour of the egg. Except as to size, the two eggs from this nest resemble those of the Sparrow-hawk more than any other raptorial bird. The Greeks, who are the worst field-naturalists possible, have no name for this species distinct from that of any other Eagle, all of which they call indifferently ἀετός, in the same way that they call all Vultures ὄρνιον. The Golden Eagle (*Aquila chrysaëtos*) is certainly not common in this district, and the Imperial Eagle I never once saw. There did occur during last winter a very black Eagle, which appeared to me much smaller than *Aquila chrysaëtos*, though similar in character. Can this have been the *Aquila fusca* of Brehm?

XXXVI.—*Recent Ornithological Publications.*

1. English Publications.

We have little to speak of under the head of English books relating to Ornithology since we last addressed our readers. The volume of the Zoological Society's 'Proceedings' for the past year (1859), with illustrations, has been issued. Nine of the 48 plates represent birds. The first part of the 'Proceedings' for the present year is likewise published, and contains many papers on Ornithology. Mr. Bree's 'Birds of Europe not observed in the British Isles' has reached its twenty-fourth number, the parts appearing with very commendable regularity.

The fifth number of vol. xxviii. of the 'Journal of the Asiatic Society of Bengal' contains an "Itinerary, with Memoranda, chiefly Topographical and Zoological, through the Southerly portion of the District of Amherst, Province of Tenasserim," by Major Tickell. There are several ornithological notices of interest in this paper. On the Atlaran River (Jan. 31st), "a range of perpendicular rocks of mural limestone rise sheer out of the water to six or eight hundred feet, on the right bank of the river, and some extraordinary, bold-scarped, insulated rocks are scattered also along the opposite side. On the pinnacles of these rocks we observed numbers of Adjutants. These large birds breed here annually, and the rocks are in many places conspicuously white with their dung. There are two species of Adjutant, *Leptoptilus argala* (our old Calcutta friend), and *L. javanicus* (a rarer visitor in Bengal), and both breed together in these inaccessible places. The Argala is noticeably larger than the other; but the eggs of the two species are hardly to be distinguished apart." An Appendix to this paper contains descriptions of some birds supposed to be new, procured during the journey; but as all the species have been previously named by Mr. Blyth in his 'Report' published in the previous number of the same Journal, it would have been better not to have given Major Tickell's manuscript names, which are merely useless synonyms.

2. French Publications.

The numbers of the 'Revue et Magasin de Zoologie' for this year, received since our last issue, contain several articles relating to Birds. M. C. F. Dubois writes 'Notes nido-oologiques,' on *Procnias cærulea, Turdus rufiventris,* and *Ampelis garrula.* There is more novelty in his account of the two first than in that of the last, the nest of which, he says, was first discovered by "*un* Anglais, du nom de John Wolley"! In No. 4, M. Loche describes two *new* species of Larks, discovered by himself in the Algerian Sahara. *Calandrella reboudia,* the first of these, has already been characterized by Mr. Tristram under M. Loche's manuscript name (Ibis, vol. i. pp. 58 and 422). In the second instance, M. Loche's name, *Galerida randonii,* must give way to Mr. Tristram's *Galerida macrorhyncha,* which is the more fair, as Mr. Tristram "first drew" Captain Loche's "attention to the bird as new, and supplied him with specimens in 1857[*]."

Dr. J. E. Cornay has published (Paris, Labé, 1860, 20 pp.) an elaborate "Mémoire sur les causes de la coloration des œufs des Oiseaux et des parties organiques végétales et animales."

M. O. Des Murs' general work on Oology[*] is now ready, and we propose to give a notice of it in our next Number.

3. German, Dutch, and Scandinavian Publications.

We have received, through the polite attention of Herr Oberamtmann Ferdinand Heine, of Halberstadt, an early copy of the second part of 'Museum Heineanum'—a list of the valuable and extensive ornithological collection possessed by this gentleman. It contains an account of the species of Insessorial birds belonging to the division *Clamatores* of Dr. Cabanis' arrangement, and has been prepared by the last-named gentleman in conjunction with Ferdinand Heine, the son of the proprietor of the collection. The volume is one of great interest to all students of exotic Ornithology, and has been long anxiously expected by us. We do not agree with the authors in the principles of zoological nomenclature which they have adopted, either as regards the rejection of names not classically derived, or the excessive multiplication of generic divisions. But we do not complain of their employment of these principles; for, the fact is, there is a great deal to be said on both sides of these important questions. With the general arrangement of the families and genera, as set forth in this work, we have the satisfaction of expressing our very decided approval. Several years' study of the difficult and complicated forms of the birds belonging to the families *Formicariidæ*, *Pteroptochidæ*, *Anabatidæ*, *Tyrannidæ*, and *Cotingidæ*, has convinced us that these groups cannot be sundered in any natural system, and that they must be placed together in a series apart from the more typical *Insessores*. We notice also with pleasure that accurate *Latin* diagnoses have been attached to the new species described in this part of the list, and that great pains have been taken with the synonymy. The families adopted by the authors for the arrangement of the *Clamatores* are as follows:—

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[*] Tristram in 'Ibis,' vol. i. p. 427.

[†] Traité général d'Oologie ornithologique, au point de vue de la Classification. Par O. Des Murs. Paris, 1860. 1 vol. 8vo.

1. *Hypocnemididæ*.
2. *Eriodoridæ*.
3. *Pteroptochidæ*.
4. *Anabatidæ*.
5. *Tyrannidæ*.
6. *Ampelidæ*.
7. *Phytotomidæ*.
8. *Prionitidæ*.
9. *Coraciidæ*.
10. *Upupidæ*.
11. *Meropidæ*.
12. *Alcedinidæ*.
13. *Bucerotidæ*.

Of Cabanis' 'Journal für Ornithologie' (with which 'Naumannia' has become incorporated from the beginning of the present year—the new series being under the joint editorship of Dr. J. Cabanis and Dr. E. Baldamus), we have received parts iv. and v. for last year. There are several articles in these numbers that will well repay perusal, such as the continuation of Dr. H. Bernstein's notes upon the nidification of Javan birds, Dr. J. Gundlach's ornithological letters from Cuba, and Von Gonzenbach's "excursions" from Smyrna to the breeding-places of the *Laridæ*, &c., besides the more strictly scientific papers of Dr.

Hartlaub, F. Heine, and others. Dr. J. Gundlach's account (p. 297) of the nidification of the Cuban Palm-Swift (*Tachornis iradii*) (which he maintains is different from *T. phœnicobia*, Gosse, of Jamaica) is curious, and agrees with Mr. Gosse's accurate notes on the Jamaican species in his 'Birds of Jamaica' (p. 58). Does it not go to show the relationship of the *Cypselidæ* to the *Trochilidæ*?

Of the new series of the 'Journal' edited by Dr. J. Cabanis and Dr. E. Baldamus, we have seen the first number for the present year. It commences with the first portion of an elaborate article by Dr. G. Hartlaub, of Bremen, on the Birds of Madagascar. From this wonderful island, which it seems almost justifiable to consider, with I. G. St. Hilaire, as a zoological region of itself, though it is preferable to class it as an abode of exaggerated* Æthiopian forms, 156 species of birds are now known to Dr. Hartlaub, of which no less than 89 are, as far as is hitherto known, peculiar to the island †. Of generic forms not less than 25 are purely Madagascarian—a still greater test, perhaps, of the eccentricity of its fauna. There are likewise some contributions to our knowledge of the Great Auk (*Alca impennis*), a subject which is now attracting much attention, in the present Number, and other articles, one of which will be recognized as familiar in an English dress to most of our readers.

The Annual of the Zoological Society 'Natura Artis Magistra' of Amsterdam for the present year contains an article by Professor Schlegel "over eenige in Nederland waargenomen vremde Vogelsoorten" (upon some foreign species of birds taken in Holland), in which some account is given of a pair of *Syrrhaptes paradoxus*, observed in the Dunes near Zandvoort, at the end of August last. One of them was shot in the beginning of October, as we have already stated ‡, and the specimen is now in the collection of the Society at Amsterdam.

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* Confer Journ. Proc. Linn. Soc. (Zool.) ii. p. 139.

† In the *Mammalia* the proportion is still greater—out of 50 species inhabiting Madagascar, only one or two being likewise met with on the mainland.

‡ Ibis, 1860, p. 109.

Professor Schlegel has also sent us the first part of a new popular work* on the Zoology of Holland, of which he has undertaken to write the portions relating to the Vertebrata.

The Proceedings† of the Royal Danish Academy of Sciences for the present year contain a paper by Professor J. Reinhardt of Copenhagen on the nidification of the Anis (*Crotophaga*), in which he has carefully collected extracts from the different authors who have written on this subject. The Professor considers that there exist but three species of the genus, viz. *Crotophagæ ani, major,* and *sulcirostris,*—an opinion, we may mention, which exactly agrees with our own views on this point. Professor J. Reinhardt has also published some remarks ‡ on the question whether *Picus tridactylus* is to be considered a Danish bird, in which he takes to task Dr. Kjærbölling's somewhat loose statements on this point, and notices several discrepancies which exist between the assertions made in the latter's "Danmarks Fugle," and the accounts of the same occurrences given by the same author in 'Naumannia.'

IV. American Publications.

The 'Proceedings of the Academy of Natural Sciences of Philadelphia,' of which we have received up to p. 80 for the present year, contain some notes on the habits of the Mexican Humming-birds (*Campylopterus delattrii,* p. 47, and *Cyanomyia cyanocephala,* p. 80), by Rafael Montes de Oca. We have also to thank Prof. Baird and Mr. Cassin for separate copies of the first portion of the latter gentleman's catalogue of the birds collected during the United States' expedition for survey of the Isthmus of Darien. The locality is interesting and hitherto unexplored. A new Puff-bird (*Monasa pallescens*), and the recently described Toucan (*Selenidera spectabilis*) and *Calliste* (*C. lavinia*) are among the most noticeable novelties. Mr. Cassin's *Ortho-*

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* De Dieren van Nederland. Gewervelde Dieren door Prof. H. Schlegel. Haarlem, 1860, 8vo.

† Oversigt over det Kgl. Vidensk. Selsk. Forhandlinger o. s. v. 1860.

‡ "En Bemærkning om det Berettegelse, hvormed *Picus tridactylus* er anfört i Fortegnelsen paa de i Danmark trufne Fugle."

gonys olivaceus is evidently a species of *Vireolanius.* We may also remark that *Lipaugus unirufus* is a very different bird from Lafresnaye's *Querula fuscocinerea.* Mr. Salvin has recently brought numerous specimens of the former bird from Coban, Vera Paz: the latter is from New Granada.

XXXVII.—*Letters, Extracts from Correspondence, Notices, &c.*

M. O. Des Murs has written us the following letter in reply to our remarks on the egg of *Balæniceps* (*anteà*, p. 188), and on his proposal to associate *Passer* with the *Ploceinæ.*

"Paris, 4 Mai, 1860.

"Mon cher Monsieur,—Décidément, je compte, dans le nombre de vos savans ou studieux correspondants, je ne dirai pas un ennemi, mais un collègue en ornithologie, qui se montre animé envers moi de tout autre sentiment que celui de la bienveillance.

"Je trouve encore, dans votre intéressant 'Ibis' d'Avril, un article qui en est la preuve, et qui, si je l'ai bien compris, s'exprime, entr'autres choses, en ces termes, au sujet de ma description de l'œuf du *Balæniceps*:—'. . . et certainement, il ne pond pas des œufs *tachetés,* comme M. Des Murs s'avance INGÉNUMENT!'—'and certainly does not lay *spotted* eggs, as M. Des Murs himself CANDIDLY allows!'

"Or, mon cher Directeur, rien n'est plus inexact, en tout point, que ce que me fait dire *si obligeamment* votre correspondant, pour se donner sans doute le plaisir de me mettre en défaut, de l'autre côté du Détroit.

"Il me suffira de reproduire *tout nettement* ce que j'ai dit, et ce que je maintiens, quant à la description de l'œuf du *Balæniceps* de ma collection:—

"'Il est de forme ovée plus ou moins allongée, mesurant de $8\frac{1}{2}$ à 9 centimètres de grand diamètre, sur 6 centimètres de petit diamètre. Sa coquille *est d'un blanc légèrement azure,* ce ton acquérant plus d'intensité dans la transparence du test; la cristallisation en paraît assez fine et homogène, mais *laisse apercevoir des* PORES *passablement indiqués par des espèces de*

PIQUETURES *plus ou moins espacées,* et en plus petit nombre vers le petit bout: particularité qu'offrent également et l'œuf des Grues et celui des Ibis, mais notamment celui des Spatules. Car malgré les rapports du *Baléniceps* avec le Marabou (*Leptoptilos*), si bien indiqués par J. Verreaux, nous n'en avons pu saisir aucun entre l'œuf de l'un et de l'autre, *pas plus que nous n'avons trouvé trace de taches brunes ou autres sur celui du Baléniceps, nous le répétons,* D'UN BLANC UNIFORME, *empreint seulement par fois de* SOUILLURES ÉTRANGÈRES À TOUTE ESPÈCE DE COLORATION NATURELLE.'

"Il résulte bien évidemment de cette citation, que vous retrouverez également page 434 de l'ouvrage que j'ai eu le plaisir de vous offrir, et dont, même après le reproche immérité d'*ingénuité,* je n'ai pas à retrancher une lettre, que mon contradicteur, si sûr de lui-même, ou a mal lu ma description, ou n'y a rien compris.

"C'est sans doute un malheur de ne pas posséder une langue autre que sa sienne; et ce malheur je suis tout le premier à y compâtir pour mon propre compte: aussi, lorsque je ne me trouve pas de l'avis d'un auteur étranger, ai-je toujours soin d'exprimer avec réserve, et en termes convenables, mes dissidences d'opinion.

"J'aurais donc bien de me plaindre auprès de vous, et auprès de vos nombreux lecteurs, du terme d'*ingénuité* dont me gratifie votre correspondant, et que je ne puis véritablement, avec tous les ménagemens possibles, que lui renvoyer à lui-même, qui prend pour une indication *de taches,* sur des œufs *que je décris d'un blanc uniforme,* l'indication *de petits trous* que les pores, plus accusés en certains endroits, permettent d'apercevoir à l'œil nu sur la coquille.

"Quant aux mœurs du *Balæniceps,* je n'en fais l'objet d'aucune discussion: j'ai indiqué mon auteur, ce n'est pas mon affaire. Mon Dieu! Gould a bien représenté cet oiseau avec un petit crocodile dans le bec! il n'y a pas loin de cette espèce de sauriens à de petites tortues, ou aux chéloniens. Je n'attache donc aucune importance sérieuse à cette question de nourriture. Ce qu'il en résulte, jusqu'ici pour la science, c'est que le correspondant de Gould a vu le *Balæniceps* se nourrir de crocodiles (petits), celui de Verreaux, de petites tortues, et M. Petherick, de poissons.

"Pour ce que j'ai dit du *Passer montanus,* c'est une simple question de classification, et jusqu'à présent les opinions ont été assez libres sur ce point pour permettre toute espèce de tentative à cet égard, sans qu'on fut exposé au reproche de ridicule. N'a-t-il pas plu à l'honorable M. G. R. Gray de séparer tout-à-fait les *Capitoninæ* des *Bucconinæ,* et au Prince Ch. Bonaparte, d'agir de même au sujet des *Cypselinæ* et des *Hirundininæ,* sans qu'on les accusât de *ridicule* ou d'*ingénuité*? Chacun d'eux avait son système scientifique; voilà tout. Pourquoi ne nous serait-il pas permis de rapprocher le genre *Passer* au genre *Ploceus*? Nos motifs, nous les avons donnés: c'est que nous croyons, en cette matière, les caractères tirés des mœurs et de l'œuf de l'oiseau, beaucoup plus déterminans que celui auquel s'est arrêté le Prince Ch. Bonaparte.

"Trève donc de ces points d'exclamation qui sentent trop le Grand Seigneur, et qu'il faut laisser à ce profond naturaliste, à qui d'ailleurs sa haute position scientifique pouvait bien les faire pardonner.

"En définitive, il me semblait que j'avais rendu assez de services à la science oologique depuis près de trente ans que je m'en occupe, et fait preuve de connaissances assez spéciales en cette matière, pour que je me crûsse, en Angleterre surtout, à l'abri de ces petites critiques sans dignité, et de ce que j'appelerai ces mauvais procédés.

"Si j'avais reconnu, ou signalé ce que l'on appelle oologiquement des *taches* sur l'œuf du *Balæniceps,* est-ce que je l'aurais comparé à celui du *Phœnicopterus* et du *Pelecanus*? ce rapprochement seul aurait dû faire réfléchir votre correspondant.

"J'espère donc de votre impartialité, mon cher Directeur, que vous voudrez bien insérer ma réponse dans votre Journal 'l'Ibis,' afin que vos lecteurs qui ont lu l'accusation lisent aussi la défense; autrement j'en serais réduit à l'insérer dans la 'Revue de Zoologie' de Guérin; et je préfère vous laisser le soin et l'honneur de cette rectification.

"C'est vous faire assez comprendre, mon cher Monsieur, quelle

est ma confiance en votre loyauté bien connue, et quels sont pour vous mes sentimens de haute estime et de considération.

"O. Des Murs."

With regard to the first point, we give M. Des Murs' remarks, in accordance with his request; but it will be observed, that the whole ground of his complaint rests on an erroneous interpretation of what we have said. M. Des Murs has mistranslated the passage complained of, and given it a meaning exactly contrary to that which it conveys in the original. Far from implying that he "advanced" the theory that the *Balæniceps* lays "spotted" eggs, we stated that M. Des Murs "candidly allows" (*avoue franchement*) that on this point M. Verreaux's correspondent was in error. We, therefore, thought M. Des Murs "unwise" in accepting M. Verreaux's correspondent's statements on other points relating to the habits of this bird. M. Des Murs' description of the egg of the *Balæniceps* is sufficiently accurate, and we have no fault to find with it. As concerns the second point, we admit that the subject of zoological classification is one on which considerable latitude of opinion is allowable. But when any new and startling theory is propounded, it is hard upon the critic not to be allowed the use even of a note or two of admiration!

Mr. S. Stevens has kindly communicated to us the following extracts from letters recently received from Mr. A. R. Wallace:—

"Awaiya, Ceram, Nov. 26, 1859.

"I have nothing particular to say now, except that Ceram is a *wretched place* for birds. I have been here a month, and have got *literally* not a single pretty or good bird of any kind, except the small Lory I sent before from Amboyna; and, what is more, neither European residents nor natives know of a single handsome bird in the country, except one or two Lories and Pigeons, which I have not yet got or seen. When Mr. Gould and others talked about the *very fine* birds of Ceram, you should have asked them to specify them, that I might know what to inquire or look for. My only hope is now in the eastern part of the island; but I cannot expect there anything but one or two fine Lories. In

Coleoptera and Butterflies I shall do better, though almost all are the same as at Amboyna. I am at present confined to the house from the bites of an *Acarus*, which produces inflamed sores on the legs, though it is invisibly small. My three best men have all left me—one sick, another gone home to his sick mother, and the third and best is married in Ternate, and his wife *would not let him go*: he, however, remains working for me, and is going again to the eastern part of Gilolo."

"Passo, Island of Amboyna, Dec. 31, 1859.

"My letter was returned to me because I had not prepaid the postage as far as Singapore. I now add a few lines. I have just arrived here, being quite tired of the barrenness of Ceram. I shall stay about three weeks, and then go to East Ceram and Kè, if possible."

"Passo, Feb. 14, 1860.

"I send you this *viâ* Marseilles, in order that you may get for me, as soon as possible, three cheap small double-barrelled guns, and send them overland to Ternate, to be ready for my next year's campaign to *New Guinea*. They are absolutely necessary for me, as I have now with me Charles Allen, who went out with me, and we must have a double quantity of tools to work with. He is now starting from N. Ceram and Mysole, while I go to E. Ceram and Kè. I expect to get some grand collections yet to send you. I am now packing up my Ceram and Amboyna collections to send you. In birds they are miserably poor—only *one* being, I think, *new*, and very interesting from being a second species of the Celebes' genus *Basilornis*. The few specimens of *Tanysiptera* were only obtained by two men going out for a month after nothing else; and the beautiful *Lorius domicella* was equally scarce, though domesticated specimens are abundant. There is scarcely anything else of interest but the unique *Platycercus amboinensis* (not found in Amboyna, however), which will show that my Dorey Bird was a distinct species."

Mr. Blyth writes from Calcutta, April 31st, as follows:—

"The Cassowary which I described to you (see 'Ibis,' 1860, p. 193) is now more than half-grown, and in company with two of the common species. It is decidedly new, and I have described it as *Casuarius uno-appendiculatus*—rather a long name, but descriptive of its most strongly-marked peculiarity. The casque is much the same at this age as in *Casuarius galeatus*, but the colouring of the bare parts is altogether different, and the plumage much paler in colouring."

Mr. Edward Newton's last letters from Mauritius are dated May 4th. He has been unable to send home any further collection of birds; indeed his time has been so fully occupied by other duties, as to prevent him from employing himself to any great purpose in those researches to which he is as much as ever attached. We may remark, that the species mentioned in our last Number ('Ibis,' 1860, p. 201), though with an indication of uncertainty, as "*Turdus ourovang*," proves to be *Ixocincla olivacea*, Blyth; *Hypsipetes olivacea* of Bonaparte (Consp. Av. i. 261). It is not distinguishable generically from the *Hypsipetæ* of Continental India.

To the Editor of 'The Ibis.'

Sir,—At the conclusion of the "Observations on the Birds of St. Croix," contributed to the 'Ibis' for 1859, by my brother Edward and myself, we subjoined some remarks on the species found in the neighbouring islands. I am now able to communicate a few more facts illustrative of the ornithology of the Virgin group. Mr. Riise has lately arrived in Europe, bringing with him a small but interesting collection, made chiefly in the Danish islands of St. Thomas and St. John. From the latter locality are several examples of *Gymnoglaux nudipes*, one of which is remarkable for the bright hue of its plumage, exhibiting in this respect a perfect analogy to the rufescent stage observable in many of the *Strigidæ*, and especially in the well-known cases of *Scops asio* and *Syrnium aluco*. From St. Thomas, Mr. Riise's collection includes specimens of *Scops porto-ricensis* (with two eggs), *Elainea riisii*, Sclater* (the first examples of which were obtained by Mr. O. Salvin in May 1859), *Ægialites vociferus*,

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* Allied to *Elainea pagana*—described at a recent meeting of the Zoological Society (June 12th, 1860).—Ed.

Spatula clypeata, *Mareca americana*, and, singularly enough, one example of *Eupsychortyx sonninii*, which last I can only suppose to be an importation from the mainland of South America. From Bieque or Crab Island Mr. Riise has also obtained *Molothrus sericeus* (Licht.), in no way differing from South-American specimens of that bird.

In a letter which I lately had the honour of receiving from Professor Reinhardt, that gentleman kindly informed me that he had not long since procured from St. Croix an adult female example of the common *Picus varius* of the United States,—a species of so wide a range, that he had formerly obtained it from Greenland (lat. 61° N.) (Kjöbenh. Videnskab. Meddels. 1853).

In our "Observations," my brother and myself stated that we had reason to believe that one of the *Picidæ* occurred in St. Croix, and subsequently we were led to suggest that *Melanerpes portoricensis* might prove to be the species meant by our informants. The value of our suggestion is therefore impaired, though not wholly destroyed, by Professor Reinhardt's interesting communication. Yours, &c., Alfred Newton.

Elveden, June 11th, 1860.

The sale of a portion of the duplicate eggs from the collection of the late Mr. John Wolley took place, as advertised, at Stevens's Rooms, on the 30th and 31st of May last. The total amount realized, as we are informed, was £329 5*s*. 6*d*. for 376 lots, including the eggs of 130 species, most of which had been obtained in Lapland. The attendance of buyers was good, and the prices which many of the specimens fetched shows the high value set upon Mr. Wolley's authority. Eggs of *Falco fulvus* (Scotch) were sold at £4; *Strix lapponica*, £2 4*s*. to £2 8*s*.; *Strix tengmalmi*, about the same; *Anthus rufogularis* (*cervinus*), £1 3*s*.; *Pyrrhula enucleator*, £2 2*s*. to £2 12*s*.; *Bombycilla garrula*, £3 to £3 7*s*. 6*d*.; *Totanus fuscus*, £1 to £1 5*s*.; *T. glottis*, 16*s*. to £1 5*s*.; *Limosa rufa*, £5; *Scolopax gallinula*, £1 14*s*. to £1 19*s*.; *Tringa platyrhyncha*, 13*s*. to £1 2*s*.; *T. temminckii*, 14*s*. to £1; *T. maritima*, 17*s*. to £1 3*s*.; *Anser bernicla*, £1 13*s*.; *Mergus albellus*, £5 5*s*.; *Lestris parasitica* (*buffonii*), £5 10*s*., &c., &c. The proceeds of the sale are to be applied to the publication of Mr. Wolley's notes, which will be edited by Mr. Alfred Newton, and will form a Catalogue of the collection as now in the possession of the gentleman last mentioned. This work, the 'Ootheca Wolleyana,' cannot fail to prove of great interest to all naturalists, and will, we hope, make its appearance in the course of a twelvemonth.

With reference to Mr. Powys's mention of the Owls in Andalusia (*Scops zorca* and *Strix flammea*) going into the churches and drinking the holy oil (Ibis, ii. p. 134), Mr. J. H. Gurney remarks that Señor R. Montes de Oca, who was the collector of a fine series of birds in Southern Mexico (described in P.Z.S. 1859, p. 362), told him the same story of *Syrnium zonocercum*—a common species in that country—and stated that, besides entering churches after the oil, it frequented factories, where it was said to get oil from the machinery! Is this a fact, or a Spanish notion imported into the New World by the settlers of that nation?

In a recent letter from Washington, Prof. S. F. Baird, of the Smithsonian Institution, mentions the discovery by Mr. Xantus (who is continuing his researches at Cape S. Lucas, the southern extremity of the Lower Californian peninsula) of a new Humming-bird of the genus *Amazilia*[*].

From Professor S. F. Baird we also learn that great efforts are being made to promote the study of Oology in America. There were no less than six Northern expeditions planned to be executed during the present season, from all of which he had expectation of eggs.

1. Mr. Kennicott spends his season on Great Slave Lake, at

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[*] Mr. Gould has just received specimens of this bird, and of three other *Trochilidæ* recently described by Mr. G. N. Lawrence of New York. The *Amazilia* (which bears attached to it the name *A. xantusi*) is evidently the female of a species of *Heliopædica*, the male of which (from Southern California) has been named by Mr. Lawrence *Heliopædica castaneo-cauda*. The species is new, and one of great interest, being a strict congener of *H. melanotis* of Mexico and Central America. The second of the birds described by Mr. Lawrence is a Bogota skin, hardly different from the ordinary *Heliomaster longirostris*, which he has proposed to call *H. stuartiæ*; and the third—the type of his *Mellisuga merrittii*—is, as Mr. Gould believes, the female of *Clais guimeti*. The latter is from Veragua.—Ed.

Fort Resolution, the head-quarters of the Ducks, Geese, Swans, Cranes, &c. 2. Mr. Drexler left Montreal April 3rd, for James's Bay. He will probably establish himself at Big River, on the eastern side, where aquatic birds abound. 3. A party to the coast of Labrador as far as lat. 55°, to start May 25th. 4. A party to the coast of Greenland, and thence to Labrador, about June 25th. 5. The solar eclipse (July 18) party to Cape Chudleigh, lat. 60°. 6. Dr. Hayes's Arctic Expedition.

The Gardens of the Zoological Society now contain a collection of living Struthious birds more complete than any that has been yet formed, embracing no less than ten species. The Ostriches are represented by a fine pair of the northern variety of *Struthio camelus*: the genus *Rhea* by examples of three species—a fine male *Rhea darwinii,* two females of *Rhea americana,* and a male of the recently described *Rhea macrorhyncha,* Sclater, the smallest of the group. The Cassowaries, of the Moluccas, have also received an addition in the shape of a young bird, just added to the collection, distinguished by the two throat-lappets being separated from each other, upon which a species (*Casuarius bicarunculatus**) has been founded. This specimen, with a nearly adult male *Casuarius galeatus,* and three Mooruks (*Casuarius bennettii*), form a fine series of this division of Struthious birds, which however yet requires Mr. Blyth's *Casuarius uno-appendiculatus,* and Mr. Wall's (perhaps somewhat problematical) *Casuarius australis,* to render it complete. Of the Australian form of *Struthionidæ—Dromæus*—the Society have a pair of adults of the common species (*D. novæ hollandiæ*), besides an immature bird, and a chick lately hatched in the incubator, which is carefully nurtured by a domestic hen. Of Mr. Bartlett's new Spotted Emeu of Western Australia (*D. irroratus*) there are also two examples, representing the old and young plumage of this conspicuous species. The female Mantell's *Apteryx,* which has lately signalized herself by laying a series of enormous eggs, completes this remarkable collection.

* Sclater, Proc. Zool. Soc. 1860, p. 211.

THE IBIS.

No. VIII. OCTOBER 1860.

XXXVIII.—*On Birds collected or observed in the Republic of Honduras, with a short Account of a Journey across that country from the Pacific to the Atlantic Ocean.* By George Cavendish Taylor, F.R.G.S. (Part IV.)

[Concluded from page 228.]

70. Globose Curassow. (*Crax globicera.*)

I believe this species to be common, although I only saw it on three occasions. One was tame in Tigre Island. Another I saw in a tree near the road-side, between the Pacific coast and Comayagua, but I did not succeed in getting a shot; and the third was near the Lake of Yojoa, just after it had been killed by one of the natives, who had approached so near to it as to blow off its head.

71. Common Chachalaca. (*Ortalida vetula.*)

Not uncommon in the woods. I shot several without difficulty while they were sitting on the trees. This bird is very good eating. It is called by the natives *Chacha*, or *Chachalaca*, from its cry. I have seen them domesticated, and in company with poultry. This species inhabits the Atlantic slope.

72. White-bellied Chachalaca. (*Ortalida leucogastra.*)

This Chacha inhabits the Pacific slope. Its habits are the same as those of the preceding species.

73. Ocellated Turkey. (*Meleagris ocellata.*)

The Ocellated Turkey was not seen, but is probably to be found in the dense and unexplored forests of Honduras. When I was at Belize, Chief Justice Temple informed me that they were by no means rare in the neighbouring forests, and that dead specimens might be obtained without any great difficulty, but that the rearing of the young birds required great care, and was rarely attended with success. I also learned from him that they were not unfrequently shot by the mahogany cutters, who are either negroes or Caribs, or a mixed breed of both races.

74. LEYLAND'S AMERICAN PARTRIDGE. (*Ortyx leylandi.*)

I frequently saw coveys of these birds, especially on the high ground near Comayagua. They were usually lying in long grass, and when disturbed used to fly for shelter into the thick bushes. They were difficult to raise without a dog, and very difficult to see when up. The ground they frequented was so full of ticks and Garrapatas, as to destroy my keenness in the pursuit of them, and I did not obtain a specimen; but Mr. Edwards procured several after I left the country. In habits this species seemed to resemble the common Virginian Quail of North America.

75. SALLÉ'S TINAMOU. (*Tinamus sallæi.*)

The only instance in which I observed this bird was near Aremecina. It ran from the side of the track in front of my mule, and I shot it while on the ground. It was a very good specimen, and I much wished to preserve it; but there was no time to do so, and we were short of palatable food. We found it very good when cooked. The flesh had a greenish tinge. This I had previously noticed in birds (I suppose of the same species) which were served at table in the hotel at Panama. When riding through the bamboo and palm forests on the Atlantic slope, where the ground was completely sheltered by the thick foliage from the rays of the sun, we used often to see large birds running along the ground some distance ahead, which disappeared in the jungle as we approached. They were not unlike Tinamous; or could they have been large Rails, such as an *Aramus*?

76. LARGE WHITE EGRET. (*Herodias egretta.*)

I shot one of these birds on Tigre Island, and should say that they are not uncommon in Honduras, where, in suitable localities, there is a very good show of grallatorial birds. My specimen measured 36½ inches in length. Plumage entirely white; beak and irides yellow; legs and feet black.

77. WHITE EGRET. (*Demiegretta pealii* ?)

Plentiful in all suitable localities; as much so as *Herodias bubulcus* is in Egypt, which bird this species much resembles. I have seen trees overhanging the water in the Bay of Fonseca nearly covered with them. Measures 21 inches in length. Plumage white, with the exception of a little greyish-black at the tips of the wings and on the crest; legs and feet pale green.

78. TIGER BITTERN. (*Tigrisoma tigrinum.*)

I shot a pair of these birds on Bird Island, in Fonseca Bay, and saw another pair on a tree in the village of Lamani, near Comayagua.

79. WHITE IBIS. (*Ibis alba.*)

I saw one when passing up the Nacaome River. It was sitting on a branch of a mangrove tree overhanging the water, but I could not delay the boat in order to shoot it. I also observed several other *Grallæ* on the banks of this river; among them a very small Bittern. Also a bird with a broad bill, possibly *Cancroma cochlearia*; and a small blue Egret, much resembling the Blue Gaulin of Jamaica. I saw this last species in many localities, and it seemed to be common. At the Lake of Yojoa were some Herons of unusually large size, but I was unable to get near them. I found a specimen of *Tantalus loculator* lying dead near the village of Lamani. A young Night-Heron (*Nycticorax gardeni*) was also shot by Mr. Edwards at Fonseca Bay.

80. AMERICAN CURLEW. (*Numenius hudsonicus.*)

This species is smaller than the English bird. I found them abundant on the shores of Fonseca Bay, where they used to sit on the branches of the mangrove trees overhanging the water. Colonel Stanton shot some, and we found them good eating.

81. KILDEER PLOVER. (*Ægialites vociferus.*)

I saw these birds on Tigre Island, where I shot some; also on the open part of the plain of Comayagua.

82. Great Stone-Curlew. (*Œdicnemus* —— ?)

I saw Stone-Curlews on the plain between La Brea and Nacaome, and on the open part of the plain of Comayagua. On the latter occasion I shot six from the back of my mule, and had I not been pressed for time, I could easily have got more. They are fine birds, and good eating, and on open ground show good sport, especially to any one shooting from the saddle. By riding in a circle I could always get within range. These birds resemble *Œdicnemus crepitans* of Europe, but are very much larger, and on open ground are conspicuous at a considerable distance. Length 21 inches. Eye large; irides and eyelids bright yellow: legs pale yellow: bill very strong and black, with base of lower mandible yellow. Above the eye a black stripe; chin, breast, and belly white; under tail-coverts deep buff; upper surface of body coloured like a Curlew; wing-primaries dark brown, with a broad bar of white across the middle feathers. I have compared the preceding description (taken from the dead bird in Honduras) with a specimen of *Œdicnemus vocifer* in the British Museum, and with the description of the same bird given in the 'Magasin de Zoologie.' My bird seems to have been much larger than *Œdicnemus vocifer*, and I do not think it the same.

83. Wilson's Snipe. (*Gallinago wilsoni* ?)

I saw two or three Snipes in moist places near Comayagua, and have no doubt they are common in the rainy season. I shot at them, but I was too much shaken by fever and ague to be able to kill them. They seemed exactly similar to the European bird. I have shot Snipes in England, Ireland, and Scotland, in the island of Crete, in Asia, Africa, and America, and have never observed any material difference in them, either in plumage, size, habits, voice, or taste.

84. American Gallinule. (*Gallinula galeata.*)

In size and appearance extremely like the English Gallinule, *Gallinula chloropus*. Probably common; but I only saw them at the Lake of Yojoa, where I also saw numbers of Coots (*Fulica*).

85. Chestnut Jacana. (*Parra gymnostoma.*)

Common in all suitable localities. I found them very plentiful in the crater lagoon in Tigre Island and on the Lake of

Yojoa. Without a boat they were difficult to shoot, and to secure when killed, for they run about on the leaves of aquatic plants, in water too deep for any one to wade in it. For this purpose their feet are admirably adapted. The difference of plumage between the adult and young birds is so great as to make them appear like different species to any one not accustomed to them.

86. RED-BILLED WHISTLING DUCK. (*Dendrocygna autumnalis.*)

The Lake of Yojoa is the only locality where I saw this Duck; there they were plentiful, and easy of approach. I found them good eating.

87. BLUE-WINGED TEAL. (*Cyanopterus discors.*)

I saw this species on Tigre Island and on the Lake of Yojoa. They are very good eating. In Tigre Island I fired at a small flock on the wing, and killed two of them. One towered, and before it reached the ground a large Hawk caught it, and carried it off. I could have shot the Hawk; but as it would have fallen into deep water, where I could not have picked it up, I refrained from firing.

88. MUSCOVY DUCK. (*Cairina moschata.*)

Is a common species in these latitudes. I saw some at the Lake of Yojoa; but they were wild, and I did not get a shot. They settled on a large extent of shallow water near the shore, where the bottom was very muddy, so that we could not walk, and there was not sufficient depth of water for our canoe. At the same place I saw some small diving Ducks, perhaps *Erismatura rubida*; these would sink rather than dive, without disturbing the surface of the water. I also saw Ducks with a note very similar to the quack of a common wild Duck, *Anas boschas*.

89. BLACK CORMORANT. (*Phalacrocorax mexicanus* ?)

A bird of this species that I shot on the Lake of Yojoa measured 26 inches in length. Beak brown, yellow at gape; irides green; legs and feet black, tinged with green; back brown, each feather edged with black; under part of neck and throat brown; breast and belly greenish-black. Tail-feathers twelve in number, dark brown, and very stiff.

90. Brown Pelican. (*Pelecanus fuscus.*)

Very plentiful on both the Atlantic and Pacific coasts, and, indeed, wherever I have been in the western tropics. They have a breeding station in Fonseca Bay, as I was informed, but I was unable to visit it. I never saw one with a rufous neck. Those I saw generally had the plumage grey, and the neck completely white, with yellow feathers on the head. It is a beautiful sight to see these birds fishing. They fly at a considerable height, with slowly flapping wings; on seeing a shoal of fish beneath them, they "round to," and fall like a stone into the water, causing the spray to dash up many feet into the air. If successful, they sit on the water, and dispose of their prey; if the contrary, they rise again, and look out for a fresh chance. The spray they cause by dashing into the water may be seen far away, much further than the bird itself is visible to the naked eye.

91. Booby. (*Sula fusca.*)

These birds were not uncommon along the coast. I saw one on Bird Island in Fonseca Bay, and another flew on board the 'Columbus' on our voyage from Panama to La Union. It kept company with the ship for some time, and made repeated attempts to settle, and at last perched in the rigging, and was caught by a boy. After examining it, we turned it loose again.

92. American Darter. (*Plotus anhinga.*)

I saw several of these birds on the Lake of Yojoa, but was unable to get a shot.

93. Frigate-bird. (*Fregata aquila.*)

Common on the coast in all parts of the western tropics that I have visited. They were very plentiful in Fonseca Bay, where there was a breeding station on one of the islands. I found them breeding on the 1st of January*. They fish much in the same manner as the Pelicans, but instead of entering the water, they stop short on reaching the surface, and seize their prey with the beak, almost without causing the slightest ripple, and ascend again with a heavy flapping of their long wings. In flight and general appearance they much resemble large black Terns. They soar to an immense height, often appearing mere specks in the sky.

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* See 'Ibis,' vol. i. p. 150.

94. DOMINICAN GREBE. (*Podiceps dominicus.*)

I saw several small Grebes on the crater lagoon in Tigre Island, and shot two of them. The larger measured $8\frac{1}{4}$ inches in length. Irides yellow; legs and feet dark lead-colour; upper surface of body nearly black; chin white; breast reddish; primaries white, edged with dark. The other one, killed by the same shot, was smaller, and probably a female.

APPENDIX.

The following birds were omitted in their proper places:—

1. AMERICAN MEADOW LARK. (*Sturnella ludoviciana.*)

The only place where I noticed this bird was in the open grassy plain near Siquatepique, where they were abundant. When running among the grass they appear like Quails (*Coturnix dactylisonans*), especially when they stop and raise their heads—a common practice when approached within a short distance. In the United States I have found these birds difficult of approach, but here they were tame enough.

2. HOODED WREN-CREEPER. (*Campylorhynchus capistratus.*)

I saw a small colony of these birds preparing their nests in some low bushy trees with large trunks growing by the side of a stream on the Pacific Slope. I did not observe them elsewhere.

The Parrot mentioned (p. 121) as much resembling *Chrysotis auripalliata*, is *Chrysotis xanthops*.

The large Hawk spoken of as "possibly *Buteo æquinoctialis*" (p. 226) was probably a *Urubitinga*.

XXXIX.—*Remarks on the Internal Structure of the Bearded Titmouse* (Calamophilus biarmicus). By ROBERT F. TOMES, C.M.Z.S.

THE little bird which forms the subject of the present communication is one of those, the precise affinities of which are somewhat obscure. It appears by common consent to have been classed with the Tits (*Parus*), amongst which, or rather perhaps appended to them, we find it in most works on ornithology. The names of Temminck, Bonaparte, Yarrell, Schlegel, G. R.

Gray, Degland, and of Keyserling and Blasius, will be quite sufficient for me to adduce in support of this statement, whilst the name of Professor Macgillivray, so far as I know, stands alone in justification of its asserted Fringilline affinities.

Having received, through the kindness of Mr. Sclater*, some specimens preserved in spirit, I set about making a dissection, the object of which was to ascertain if any osteological peculiarities were present which might confirm or refute the views of Professor Macgillivray. The results of this examination I now propose to give. Before doing this, however, it appears desirable to mention what has been stated by the late Professor, and I cannot do better than quote his own words, being confident of their great accuracy :—

"Tongue slender, trigonal, obliquely truncated and lacerate; œsophagus enlarged into a kind of half-cross, inclined toward the right side; stomach muscular, with a dense rugous epithelium.

"The examination of the digestive organs of the only known species of this genus at once determines its natural affinities, showing that, having the kind of dilatation of the œsophagus peculiar to the Huskers, it must be referred to that group, although it has hitherto been considered as closely connected with the Tits.

"In some respects it is distantly allied to *Emberiza schœniclus*; but its more direct affinities are, I think, to the species of the American genus *Ammodramus*, whose mode of life is very similar. Its affinity to the Tits is very remote; and, although I have been censured for pointing out errors, I cannot allow such an association to remain undisturbed. The bird in question has not the abrupt bristle-tipped tongue of a Tit, and its œsophagus is dilated toward the right side, as in all the birds which I have referred to the order of Huskers.

"During the autumn and winter they live chiefly on the seeds of the reeds, which they pick from the husks; but they also, as is related by Mr. Dykes, feed upon *Succinea amphibia* and *Pupa muscorum*, he having found 'the crop of one, which was not larger than a hazel-nut, containing twenty of the former, and some of them of a good size,' together with four of the latter. Now none of the *Parinæ*, nor indeed any bird of the whole order of *Cantatores*, has a crop, which on the other hand occurs in a greater or less degree of development in all the *Deglubitores*."

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* For these specimens our best thanks are due to Mr. Henry Stevenson of Norwich.—Ed.

While coinciding perfectly with Professor Macgillivray in all that is here quoted, I cannot but regret that he has in this, as in so many other instances, neglected to support his conclusions by osteological evidence, a deficiency I now venture to supply. The genus *Ammodramus* I do not know.

On viewing the bill in profile, its upper outline is seen to form one uniform curve from base to tip; and the lower margins of the same mandible have a somewhat similar curve, but less in degree, the regularity of which is interfered with by a slight prominence near the middle. The greatest depth of this mandible is at the nostrils, and its lower margins are *bent inwards* as in *Emberiza*. Seen from above, it is much the broadest at the base, and its sides present two nearly straight lines. The lower mandible is rather peculiar: its upper margins are *bent inwards* to match the inferior ones of the upper mandible, and they maintain a moderately uniform curve, the regularity of which is only interfered with by a slight prominence about the middle; in this respect it may also be said to resemble the upper mandible. It is altogether much weaker relatively than the superior one; and the line which constitutes the *symphysis menti* is quite straight and *very short*, not being more than equal in length to two-thirds of the distance from the nostrils to the point of the bill*. To this form of lower mandible I find no approach amongst those slender-billed Finches, of which the Goldfinch and Lesser Redpole are examples; and still less is it visible in the Tits, in which the lower maxillæ are united for the whole length of what is ordinarily termed the bill. But in the genus *Emberiza* some little approximation to this form is observable. The Reed Bunting appears, of the British species, to approach it most nearly. "In some respects," Professor Macgillivray says, speaking of the *Calamophilus*, "it is distantly allied to *Emberiza schœ-*

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* The figure given by Professor Macgillivray of the head indicates, by the forward extension of the feathers of the chin, the shortness of the *symphysis menti*.

niclus," and the alliance is chiefly seen in the form of the bill of the two birds. When these parts are seen in profile, the resemblance is certainly traceable; the principal differences being in the greater curvature of the superior ridge in the *Calamophilus,* and in the much weaker lower maxilla. In other species of Bunting, in which the bill is stouter, the resemblance becomes less perceptible, but is not quite lost in any which I have examined.

I will now give a short comparative description of the bills of some of the *Paridæ,* selecting European species as illustrations. The mandibles of *Parus major* are of nearly equal size, the lower one having a degree of curvature equal to that of the upper, and but little inferior to it in length. As in the Finches, the greatest breadth is at the nostrils; but it tapers much less rapidly, and maintains, so to speak, a kind of cylindrical appearance until it curves evenly on all sides to the point. A section of the bill at its base would represent an ovoid figure, the greater diameter being vertical; and the regularity of this figure would be in no way interfered with by the space between the rami of the lower maxilla, as this does not exist further forward than to a vertical line through the nostril. The bill of the Nuthatch (*Sitta*), if shortened, would be no unfair representation of the bill of a typical *Parus,*—a bill, in fact, adapted to the habit of perforating wood, common to both of these birds. Other species of *Parus* have bills which are but modifications of the form I have here described; thus, that of the Crested Tit is longer and more slender, approaching more those of the *Sylviadæ,* &c., whilst that of *Parus cæruleus* is very short and conical. The *Parus pendulinus,* however, exhibits a considerable deviation from the other European *Paridæ* in the shape of its bill: it is very acute, tapering evenly and sharply to the point; in short, it is a very acutely pointed cone, a section at the base of which would have the same figure as that of the true *Parus.*

To none of these modifications does the bill of the *Calamophilus* bear the least resemblance; it would be as correct to say that it resembled the bill of a Partridge or a Quail, as that of a Tit; indeed I could undertake to show greater resemblance to the bill of either of the former birds than to that of the latter. If in the form of the bill there is nothing to indicate a *Parine* affinity, Professor Macgillivray has clearly shown that the alimentary system has a structure of quite an opposite nature to that of these birds.

I shall now endeavour to show that the sternum indicates a greater affinity with the *Fringillidæ* than with the *Paridæ*; but I must premise that this part, although of great importance in assisting in the determination of *families*, is much less serviceable in distinguishing between genera, and this renders it difficult, if not impossible, to say, by this means, to what genus the *Calamophilus* is most nearly allied. In a family of birds, like the *Fringillidæ*, which is not characterized by any very strongly marked peculiarities common to them all*, it may readily be conceived that the modifications of the sternum, however constant in the different groups, will be extremely difficult to define without the help of figures. In the present instance I should utterly fail to convey any intelligible idea by means of a detailed description, which would become one of measurement of parts merely, and this, in small objects, is often unsatisfactory. It will be better therefore to choose the sternum of some common species with which to compare that of the *Calamophilus*, and broadly state how they resemble each other. The sternum of the Common Sparrow resembles that of the *Calamophilus*, 1st, in the relative length of the furculum and coracoids with that of the sternum itself; 2nd, in the general outline of the latter, and in the shape of the keel; 3rd, in the extent and shape of the notches of the hinder margin, and (especially) the shape of the process which is separated from the body of the bone on either side by the notches.

The following genera, which I have specially examined in these investigations, appear to me to hold relationship to each other in the following manner, their several *adaptations* being the chief difference between them:—

Loxia. *Fringillidæ* with mandibles modified for the purpose of extracting the seeds of Coniferæ.

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* Take a Hawfinch, Crossbill, Bullfinch, Goldfinch, Redpole, and Sparrow, and remove that which *adapts* each to its peculiar *régime*; and what remains will be found to be very similar in all, and possessed of no striking external characters.

COCCOTHRAUSTES. *Fringillidæ* with mandibles of great thickness for the purpose of crushing seeds with hard shells.

PYRRHULA. *Fringillidæ* with mandibles adapted to the habit of *biting* off, and feeding upon, the young buds of trees.

PASSER. *Fringillidæ* with mandibles of medium strength, suited to a varied diet of seeds, vegetables, and coleoptera.

FRINGILLA. *Fringillidæ* with mandibles of medium strength, fitted for a *régime* of seeds, rather varied in their kind and size.

CANNABINA. *Fringillidæ* with mandibles produced to an acute point, for the purpose of extracting the seeds of composite plants.

XL.—*Note on the Birds of Prey of New Guinea.*

By PHILIP LUTLEY SCLATER.

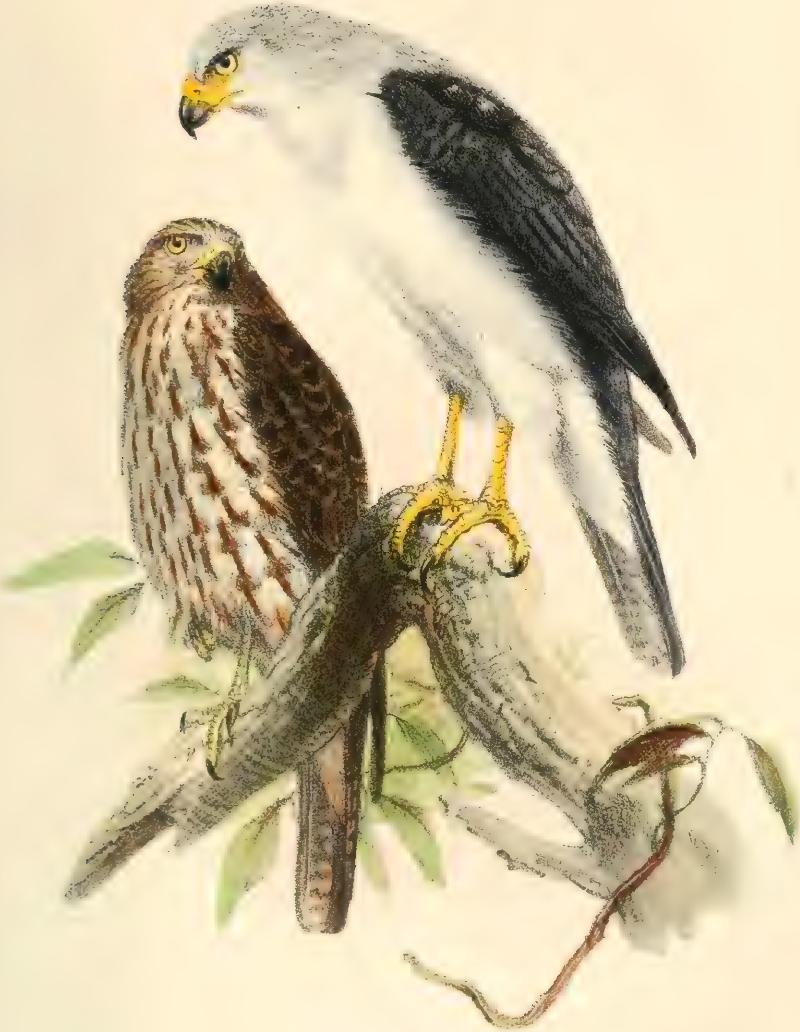
(Plate X.)

IN my Catalogue of the Mammals and Birds of New Guinea, published in the 'Journal of the Proceedings of the Linnean Society' (Zool. vol. ii. p. 154), I was able to enumerate only four Diurnal and two Nocturnal *Accipitres* as known to occur in that country. Mr. Wallace's researches at Havre Dorey have since added two more to the list, so that we now know of the following eight species of Raptorial birds inhabiting New Guinea:—

1. *Ichthyaëtus leucogaster.*
2. *Haliastur leucosternus.*
3. *Henicopernis longicauda.*
4. *Baza stenozona.*
5. *Astur novæ hollandiæ.*
6. *Accipiter poliocephalus.*
7. *Spiloglaux humeralis.*
8. *Spiloglaux theomacha.*

Of these eight birds, *Ichthyaëtus leucogaster*, *Haliastur leucosternus*, and *Astur novæ hollandiæ* are well known as Australian species, and have a somewhat extended geographical distribution; the remaining five, as far as has been hitherto recorded, have only been met with in New Guinea and the Aru Islands, which belong essentially to the same fauna,—a further testimony, if any additional witness were necessary, to the peculiarities of this zoology.

The *Accipiter poliocephalus*, of which Mr. G. H. Gurney's libe-



J. Smit, lith. [illegible]

ACCIPITER POLIOCEPHALUS

rality has supplied the accompanying figures (Plate X.), representing the adult and immature plumage, was described by Mr. G. R. Gray[*] from a female specimen obtained by Mr. Wallace in the Aru Islands. In Mr. Wallace's series from Havre Dorey in New Guinea was a single young male example of the same bird, as recorded in Mr. G. R. Gray's list given in the Zoological Society's 'Proceedings' for 1859[†]. These are the only specimens of this rare *Accipiter* ever yet procured. They have been kindly lent to me by Mr. S. Stevens, for the use of this work, from Mr. Wallace's private collection, in which they are retained. The species being well-marked, and easily recognizable by the figures, which have been drawn by Mr. Wolf, it is not necessary to repeat the descriptions of them, which have already been given by Mr. Gray. It may, however, be worth while to notice, that the adult *female* example (according to Mr. Wallace's determination of the sexes) is slightly smaller than the young male[‡].

Mr. Gurney's views as to the correct position of *Accipiter poliocephalus* and its allies have been already noticed in my article on *Accipiter haplochrous* (Ibis, vol. i. p. 276).

XLI.—*On Edible Birds' Nests.* By Edward Blyth, Curator of the Royal Asiatic Society's Museum, Calcutta.

We read, in the London 'Literary Gazette' for January 14, 1860, p. 54, as quite a new discovery, that "M. Payen ascribes the gelatinous properties of the birds' nests so famous in Chinese cookery, and which sell for enormous prices in Paris [qu. Pekin?], to a viscid fluid produced by the salivary glands of the Salangane Swallow [Swift]. The epicure may not thank chemistry for resolving a choice delicacy into the spittle of birds. As this secretion has peculiar properties, M. Payen calls it *cubilose.*"

That the famous edible nests of the *Collocaliæ* were "secreted by the very large salivary glands of the bird," I distinctly stated

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[*] Proc. Zool. Soc. 1858, p. 170.

[†] Proc. Zool. Soc. 1859, p. 153.

[‡]

	Long. tota.	alæ.	caudæ.	tarsi.
Spec. 1. (♀ adult. Aru)	14·	8·2	6·	2·3
Spec. 2. (♂ juv. N. G.)	15·5	8·5	6·4	2·35

in 1845 (*vide* Journ. As. Soc. xiv. p. 210); and immediately afterwards I circulated a printed monograph of the Indian *Cypselidæ* among my naturalist friends (which I have not conveniently at hand to refer to just now). In this I gave a chemical analysis of the nests by my friend Mr. J. W. Laidlay, which showed the constituent proximate elements to be those of inspissated saliva. This analysis is referred to in the late Dr. Horsfield's Catalogue of the Birds in the India-House Museum, i. p. 103; only it is not the fact that I confirmed the researches of Sir E. Home, but the reverse. He described a curious structure of the proventricular glands of some different and much larger bird, in mistake for the *Collocalia*, which does not happen to possess the peculiar structure in question*; and my statement was, that the substance of the nests was secreted by the *salivary* glands, and not by the *proventricular* glands as suggested by Home. I further pointed out, that all the Swift-family use more or less of this salivary mucus in the construction of their nests, and that in *Cypselus apus* "it constitutes the basis of the nest, by which is made to adhere the various light substances gathered in the air by these birds, when such are blown about on a windy day." (*Vide loc. cit.*) Moreover, on consideration of this composition of the edible nests, we can readily understand their alleged quality of promoting digestion.

In the 'Revue des Deux Mondes' for January of this year (p. 218), every source but the right one of the substance of these nests is amusingly cited:—"Les célèbres nids d'Hirondelles nous offrent un dernier exemple de cette ingénieuse aptitude qui porte la race chinoise, sous l'influence d'un climat spécial, à varier et à multiplier indéfiniment les substances alimentaires. Ces nids comestibles, dont la nature était jusqu'à ce jour demeurée incertaine, ont été tour-à-tour attribués par un grand nombre de voyageurs et de naturalistes célèbres, soit à une écume de mer tenace, provenant des demeures de la baleine, ramassées par ces hirondelles sur les rochers†, soit à des algues gélatineuses, à des lichens, soit encore à du suc gastrique, à des mélanges de zoophytes, de frai de poisson, ou à des mucus*. Il est constaté aujourd'hui que les nids comestibles d'hirondelles sont formés par une substance muqueuse d'une remarquable abondance, mucus tout spécial secrété au temps des amours de ces petits oiseaux."

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* I have examined the proventricular glands of several specimens, both of *C. nidifica* and of *C. linchi*, shot at the time that their nests were being constructed.—E. B.

† Willughby, 1676, 'Ornith.' "Ex spuma maris basin scopulorum

The *Collocalia nidifica* breeds in the Sikhim Himalaya, which is *rather* too far from the sea to permit of any theory that necessarily connects its nests with any product of the ocean.

Calcutta, March 31, 1860.

XLII.—*Review of* M. O. DES MURS's 'Oologie Ornithologique'†.

THAT a man with but one idea is a nuisance, is an axiom which only requires time to ripen into a proverb. In spite therefore of the agreeable impression which some of M. Des Murs' previous labours had given us, we confess to having taken up his recent publication in a spirit by no means favourable to what, as we gathered from the title of the work, we expected to find were our author's doctrines. How far a further acquaintance with them has induced us to modify our opinion, we leave our readers to discover from the following remarks.

Few writers have ridden their hobbies more unmercifully than systematizers in Natural History. In Ornithology, indeed, there is hardly any portion of a bird's organization which has not been by some one or another made the basis of classification, and announced to be the real key to the comprehension of the order of creation, and the only means of discovering the much-desired *ultimus finis*—the system of Nature. Beaks and claws, the scutellation of tarsi and the superposition of feathers, the bones of the palate and the bones of the sternal apparatus, the arrangement of the muscles of the trachea and the structure of the alimentary canal, the insertion of the quills and the set-

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alluentis tenacem quandam materiam colligunt, sive ea balænarum seu aliorum piscium sit semen, ex qua suos nidos ædificant."

* Voyez les 'Comptes rendus de l'Académie des Sciences,' 1859, p. 521.

† Traité général d'Oologie Ornithologique au point de vue de la Classification. Par O. Des Murs. Paris: Klincksieck, 1860.

ting-on of the hallux, have all been respectively taken up, and perhaps we may say abandoned,—broken reeds which pierce the hands of those who lean thereon. To the number of these *μονοπῶλοι* must be added the students in the school of Transcendental Anatomy, and the believers (of whom the race seems to be fast becoming extinct) in the once loudly praised circular system. It would therefore seem to be a difficult matter to propose any new theory of classification formed from an original point of view. Yet we believe that this much is due to M. Des Murs, that, though many ornithologists may have taken into consideration instances where oology seems to support or dispute their inferences, no one had hitherto attempted laboriously and conscientiously to accumulate a collection of facts, such as is contained in the volume we are reviewing, with the single and undivided purpose of grounding upon them a systematic scheme.

We deem it right thus early to bespeak for M. Des Murs' treatise the careful attention of our readers; but, on the other hand, it has so lately come into our possession, that we must acknowledge that we have not had time to bestow the investigation we should have wished on the multitude of observations—each of which of course requires individual and close consideration—contained in its pages. We must therefore deal with the work in more general terms, and, where we can do so, let our author be his own spokesman.

First as to M. Des Murs himself a few words may not be unacceptable; for such is, unfortunately, the deplorable indifference of many ornithologists in this country to the labours of their foreign brethren, that to some of our readers his very name may be new. For the past seventeen years he has been a constant contributor to M. Guérin-Méneville's journals, chiefly on matters connected with that of the work under our review, and, while at the same time he has edited the ornithological portion of the narratives of several of the scientific expeditions undertaken by his countrymen in various parts of the world, he has, single-handed, produced a book—the 'Iconographie Ornithologique'—a worthy sequel to the well-known series of plates of Buffon and of Temminck.

To come nearer to our immediate subject, M. Des Murs also formed a cabinet of birds' eggs, which is stated to have contained specimens of the eggs of upwards of 800 species. This was, some years since, purchased by Dr. T. B. Wilson, and, with that gentleman's usual liberality, presented to the Academy of Natural Sciences at Philadelphia, where it now forms the nucleus of one of the most extensive collections of these interesting objects in existence. M. Des Murs has thus deservedly earned for himself the reputation of being one of the most experienced of living oologists, and consequently his opinions on the subject of which he treats in the work before us are entitled to great weight.

With these preliminary remarks, we will now endeavour to give, as succinctly as possible, an analysis of the 'Oologie Ornithologique.' After a few pages of preface and introduction, we are presented with a compendious bibliography of Oology—a study we perfectly agree with our author as having barely escaped from infancy. "Comme science, ou comme complément de la science ornithologique, l'oologie est presque entièrement à créer" (Introd. p. xvi.). While our best thanks are due to M. Des Murs for the ample catalogue of ornithological works which he has furnished to us, we must, nevertheless, take the liberty of questioning one of his assertions, and of claiming for a fellow-countrymen of our own the honour of being the first egg-collector, which he assigns to the Comte de Marsigli. Our author states that "les collections oologiques ne se font jour que vers la première moitié du xviii^{e} siècle." Now it is perfectly certain that more than fifty years previously, the immortal author of the 'Religio Medici' and the 'Enquiries into Vulgar Errours,' Sir Thomas Browne, had assigned a place in his cabinet of rarities to a collection of birds' eggs. The delightful Diary of John Evelyn duly records the fact, that in October 1671 its accomplished writer journeyed "in my Lord Henry Howard's flying chariot" from the sloping lawns of Euston to visit the good city of Norwich; and the virtual founder of the Royal Society especially mentions among the sights he saw there, this evidence of what perhaps appeared to him only as a school-boy predilection of the worthy knight*.

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* Evelyn's Diary, Bray's edition, 1850, vol. ii. p. 66.

Next in order in M. Des Murs' treatise, and forming its second part, comes the "Determination of Oological Characters," doubtless the most difficult part of his task, taking into consideration the wide variation to which specimens, produced by the same species—nay, the same individual bird—are subject. In this division our author lays down as the three principal points to be attended to in the examination of eggs,—1st, their form; 2ndly, the nature of their shell; and, 3rdly, the colours which distinguish them. With respect to the first of these points—*Form*—M. Des Murs seems to consider it as of most importance, and therefrom separates eggs into six categories, which he thus denominates :—

(1.) The *spherical*, best exemplified by those of the Owls.

(2.) The *oval*, under which he includes those of the Diurnal Raptores.

(3.) The *cylindrical*, as illustrated by the eggs of the *Pteroclinæ*.

(4.) The *ovate*, of which those of the *Phasianidæ* serve as a familiar instance.

(5.) The *ovoïconical*, which comprehends by far the greater number of the eggs of the *Scolopacidæ*.

(6.) The *elliptical*, as shown in the case of the genus *Podiceps*.

Reserving, for the present, all criticism upon the nomenclature proposed, we agree with the author, that under one or another of these heads may be fairly enough comprised the egg of every known species of bird, though it will be understood that we are compelled to restrict the illustration of the definitions to the most meagre limits, and to omit the many exceptional cases which will readily occur to the veriest tyro in oology. We must, however, add here one remark of M. Des Murs (pp. 65, 66) :—

"Si l'on veut, après cela, examiner d'une manière générale et un peu plus méthodique, la répartition de ces formes dans la classe des Oiseaux, on en aura une idée par le tableau suivant, dressé, pour exemple, conformément à l'enseignement de M. Isid. Geoffroy Saint-Hilaire :—

<table>
<tr><td>"SEMI-PENNES (exceptionnellement <i>elliptique</i>) . . . .</td><td></td><td></td><td rowspan="7">sphérique."</td></tr>
<tr><td>RAPACES . . . .</td><td></td><td rowspan="5">ovalaire.</td></tr>
<tr><td>PASSEREAUX (except. <i>ovalaire</i>) .</td><td rowspan="2">ovée . .</td></tr>
<tr><td>GALLINACÉS (except. <i>cylindrique</i>)</td></tr>
<tr><td>ECHASSIERS (except. <i>ovalaire</i> et <i>ovée</i>)</td><td>..ovoïconique</td></tr>
<tr><td>PALMIPÈDES (except. <i>ovoïconique</i> et <i>elliptique</i>) .</td><td></td></tr>
<tr><td>IMPENNES . . . .</td><td></td><td></td></tr>
</table>

Our author then proceeds to consider Monstrosity of Form, and the causes to which some of its very curious effects are due. We are sorry we have not space here to give even an outline of what he says on this part of the subject, treated as it is in a very masterly manner; and we must pass over for the same reason the interesting section respecting the disproportion existing between the size of certain eggs and that of their parents.

To the Nature of the Shell, or, as it is commonly termed by collectors in this country, its "Texture," M. Des Murs devotes several pages, and arranges eggs with regard to this character into seven "series," which we will attempt to illustrate as before by a few well-known instances.

1st. Eggs with a *glossy* surface, as shown in *Alcedo*.

2nd. Eggs with a *smooth* shell, but less glossy than the preceding,—a group which embraces nearly all the *Passeres* and *Gallinæ*.

3rd. Eggs of a substance *dull and uniform*, as those of the Rapacious birds.

4th. Eggs with a surface *granulated or roughened* ("piquetée"), as in those of the Ostrich.

5th. Eggs whose shell has a *greasy or oleaginous* appearance, as those of the Ducks.

6th. Eggs whose shell, greasy as in the last, is besides *varied with calcareous protuberances*, of which the Grebes offer a familiar example.

7th. Eggs *covered with a cretaceous film or sedimentary pulp*, such as in the *Pelecanidæ*.

A lengthened dissertation on Colour, as an oological character, succeeds, in accordance with our author's plan. Its value is not to be underrated, though perhaps too much importance has hitherto been assigned to it by those writers who have ventured on this, by far the most popular, branch of the science.

"Cette partie de l'Oologie n'est pas la moins agréable à étudier; elle n'est pas non plus la moins difficile. Il est impossible, si l'on n'en a vu une suite nombreuse, de soupçonner la richesse et la variété des teintes qui ornent cette enveloppe, en apparence si grossière et si insignificante. Une collection de ce genre est réellement digne de figurer à côté des somptueuses collections de papillons et d'oiseaux dont sont remplis les cabinets d'histoire naturelle. Aussi nous ne doutons point qu'à mesure que les observations, en se multipliant sur ce sujet intéressant, en découvriront toute la valeur et le mérite, les amateurs, et même les savants, ne finissent par devenir curieux de posséder les œufs de toutes les espèces d'oiseaux connues."—(pp. 140, 141.)

An attempt is then made to establish divisions in the general colouring of eggs, as has been already done in the cases of their shape and texture. We are not warranted, however, in saying that this part of the subject is treated so happily as those on which we have previously remarked. Indeed, its inherent difficulties perhaps render success impossible. Far more satisfactory to our mind are the sections relating to the origin of the colouring matter, the influences of food, climate, and incubation upon it, and to the oft and rashly-asserted correspondence between the colour of the egg and of its parent. In these matters, and as regards the physiological and chemical inquiries which the question naturally entails, M. Des Murs appears to be quite at home, but lack of space prevents our following him into details. We have only room for his summary of the principal propositions which he considers he has established:—

"1°. Que si la forme des œufs était généralement ovée, elle subissait cependant des altérations qui se retrouvent constantes dans certains groupes; par exemple: la forme ovalaire chez les Tinamous, la forme elliptique chez les Grèbes, les Cormorans et les Pélicans, la forme ovoïconique chez les Pingouins et les Guillemots, et la forme cylindrique chez les Mégapodes et les Gangas.

"2°. Qu'il n'existe pas un seul oiseau aquatique dont les œufs soient revêtus d'une coquille luisante et lustrée, cette qualité n'étant propre, dans des degrés infiniment variés, qu'aux œufs des oiseaux terrestres.

"3°. Que la couleur des œufs ne varie en aucune manière, dans la même espèce, d'un climat à un autre.

"4°. Que le mode de coloration, tout en variant indéfiniment d'une espèce à une autre, est cependant constant, dans plusieurs groupes, chez les genres ou les espèces qui les composent : ainsi, blanc chez les Pigeons, uni et sans taches chez les Faisans et chez les Tinamous.

"5°. Que la forme des taches, à part la couleur de celles-ci, est également constante chez plusieurs groupes, par exemple les Bruants, les Quiscales et la plupart des Ictéridés." (pp. 188, 189.)

We have dwelt thus at length on this preliminary portion of M. Des Murs' work, because we have wished to convey to our readers a distinct notion of such of his ideas as are most likely to be novel to them. Our limits will oblige us to hurry over their application to Oology, though this is the more useful part of the subject; indeed, we approach the practical rendering of our author's theories with some reluctance. What becomes of the results of all his investigations if any of them be founded on an insufficient basis? Are the statements on which he relies to be safely taken as unquestionable facts? Are all the specimens from which he has formed his opinions thoroughly to be depended upon as genuine? Will they admit of a severe and impartial examination in detail? We regret very much to declare that, looking at the published Catalogue of the Philadelphian Cabinet*, of which, as we before said, M. Des Murs' collection now forms part, the odour of a grave suspicion reaches us. What are we to think of specimens from this (his former) collection (and we take only two out of several instances we might select) of *Turdus iliacus* and *Totanus semipalmatus*, to which "France" is assigned as a locality,—and yet such are entered in Dr. Heermann's list? Does any oologist pretend that the nidification in that country of either of the species just mentioned is not a matter of the highest improbability? We are willing to concede that the majority of our author's statements are well-grounded, that in most cases he has formed his opinions from specimens which are genuine; but a chain of evidence is no stronger than its weakest part, and if we find a flaw in even a few of the links, can we place confidence in all the remainder without being able to test them? Whatever may be the value finally attached to oological characters, we are ready to assert it again and again, that they can be safely used in a matter of science *only when the specimens from which they are drawn are completely free from doubt, through the care taken by the collector to identify and authenticate them.*

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* Catalogue of the Oological Collection in the Academy of Natural Sciences of Philadelphia. By A. L. Heermann, M.D. March 1, 1853, pp. 36.

It is but justice to M. Des Murs to state, that he is perfectly free from any disposition to veil the present imperfect state of oological knowledge. Indeed, with a frankness most fair and most commendable, he avows time after time his unavoidable ignorance of the eggs of many most important forms. The attentive reader of his work will soon perceive how wide a field remains still for future investigators. Nothing whatever seems to be known of the oology of whole groups, such as *Neomorpha*, the *Paradiseidæ*, and other interesting birds. The progress of the study, taken up as it now is by so many accurate observers, and pursued by them with so much zeal, will doubtless necessitate a certain amount of modification in our author's classified arrangement. In fact, from this very cause, we find him obliged to publish, under the date of the present year, a revised 'Systema Oologicum' (p. 529), differing in some degree from, and in many respects superior to, that printed only a few months previously (p. 195). In this scheme, by judicious typographical arrangement, it can be seen at a glance what are the chief innovations he has deemed it advisable to make in the arrangement of former systematists. To enumerate them would be to extend the limits of this article far too much; they consist rather in the grouping and order than in introducing new divisions, though instances of the latter kind of alterations are not wanting. We must content ourselves with recommending to all who busy themselves with classification, a careful study of his application of oological characters in forming a system, and only remark here upon a very few points which may have special interest to some of our readers.

Speaking of the group *Turdinæ*, M. Des Murs says (p. 292), "Parmi les œufs d'un vert luisant et tiqueté de noir, nous ne connaissons encore que l'œuf des *T. musicus, iliacus*, d'Europe, et *densirostris*, des Antilles;" and then a little further on (pp. 292, 293), "D'après ce qui précède, on pourrait créer, pour celles des espèces du genre *Turdus* que nous prenons pour Grives proprement dites, par leur œuf, un genre sous le nom de *Iliacus*, que nous proposons pour les *T. musicus, iliacus* et *densirostris*, et pour les autres espèces qui viendront s'y joindre par la suite, et réserver la dénomination générique de *Turdus* pour toutes les espèces dont l'œuf est analogue à celui du *T. merula*."

Now we cannot but look upon this suggestion of our author's as a singularly unfortunate one. We have already mentioned the suspicion excited in our mind by the entry in the Philadelphian Catalogue of eggs from M. Des Murs' collection to which the name of *Turdus iliacus* is applied, while *France* is given as the locality whence they come. This suspicion is converted, by the passage above quoted from our author, into a pretty strong belief that he has been entirely mistaken with regard to these examples, and that he can never have seen genuine specimens of the Redwing's eggs. Few oologists in England now require to be told that this bird does not, as was asserted by Nilsson, and after him by Temminck, Degland, and others, lay blue eggs spotted with black. The additional evidence on the subject which Mr. Hewitson was enabled, in the last edition of his work, to give ('Eggs of Brit. Birds,' 3rd ed. p. 87), entirely sets the question at rest, and would, we are sure, have saved M. Des Murs from this error, had it not escaped his notice, for he is particularly *reconnaissant* of the services rendered to oology by its English votaries. Nor can we hardly think that, on the strength of the agreement in the style of colour of their eggs, birds of such different structure as our own Song Thrush, and the *Turdus densirostris* of Vieillot, should be associated together. Indeed the latter has for some time been separated from the genus *Turdus*; and last year Mr. Sclater (Proc. Zool. Soc. 1859, p. 335) deposited it in a new genus (*Margarops*) along with two other undoubtedly allied species inhabiting the same region, one of which certainly lays a blue, though spotless egg, already figured in this Journal (Ibis, 1859, Pl. XII. fig. 8). We trust therefore that the genus *Iliacus,* as established by M. Des Murs, will receive no support from naturalists.

We do not wish to dwell upon one or two such obvious *lapsus calami* as that (p. 206) wherein the eggs of *Pandion* are said to be of a "couleur blanche, et sans tache," or the statement (p. 508) that only one of the three known species of *Bombycilla* is found in the New World; but we cannot refrain from recording our total dissent from the assertion of M. Des Murs (p. 632) that the Brambling (*Fringilla montifringilla*) is "par son œuf un véritable *Zonotrichia.*" In reality, we assure our readers, there is only the most remote resemblance between the two eggs. That of the Brambling agrees entirely in character with those of the other true *Fringillæ,* such as *F. cœlebs* and *F. spodiogenia,* while that of one very normal species of *Zonotrichia* (*Z. pileata*), which has already been described in this Magazine (Ibis, 1859, p. 18) by a most accurate observer, has, as entirely, another appearance. We fear that, as in the case of the Redwing, so in that of the Brambling, M. Des Murs has not had the advantage of seeing genuine eggs, from which to draw his conclusions. We have no reason to suppose that he is not fully aware that no real progress can be made in oology except through the attainment of eggs which may have been thoroughly identified as to species, and well authenticated as to specimens. When such are before him, even the hardest hobby-horse rider may be suffered to pursue his headlong course in safety. The worst that can happen to him is to be stopped suddenly by some insuperable obstacle, when he must retrace his steps; but his beast, being sure-footed, will not bring him to grief. If, on the other hand, he trusts himself outside a hack without a warranty, we all know what is likely to be the consequence. We therefore do not complain of M. Des Murs exercising caution in hesitating to credit (p. 501) the account given in the 'Ibis' (1859, p. 469) by Mr. Alexander S. Taylor of a supposed egg of *Cathartes californianus,* which has been figured in our last Number; but it should be remembered that that gentleman is possessed of unusual acumen, and that he has before shown himself to be well on his guard as to the reception of evidence.

It may be expected of us that we should here sum up in a few words our opinion of the 'Oologie Ornithologique;' but the task is not an easy one. We have thought it our duty to express our dissent from some of our author's opinions, and even to question some of his assertions; but of the value of the work as a whole there can be no doubt, even if it be only regarded as laying the foundation of a future superstructure. In terseness and perspicuity of style, M. Des Murs successfully equals the neatest and most lucid of his country's writers. He is also very considerate in urging the adoption of his theories, and we notice with pleasure his willingness to give English oologists their due credit. We must not omit to add likewise that the work contains a Catalogue of the Birds of Europe, which is likely to be very useful at the present time, when it is becoming customary to include among the number any chance stragglers, from what part of the globe soever they may arrive. It is needless to say anything in praise of this list further than that it has been compiled "d'accord avec J. Verreaux," one of the highest authorities on the subject. Lastly, let us mention that a careful triple index is subjoined, which contributes largely to the practical use of the work.

That, in future, naturalists must of necessity take Oology into account when investigating the classification of Birds, we regard as inevitable; but we may be permitted to place on record our deliberate conviction that a scheme composed solely with reference to this one branch of ornithology will never lead us to a true comprehension of the system of nature in relation to the class *Aves*. Oology taken alone will prove a guide as fallacious as any of the arbitrary methods of classification to which we have before alluded: combined with other characters, we assert, without fear of contradiction, it will not fail in time to produce an ornithological arrangement as nearly true to Nature as mortals can expect to achieve.

June 1860.

XLIII.—*The Penguins of the Falkland Islands.* By Capt. C. C. Abbott, of the Falkland Islands Detachment*.

The Falkland Islands, situated in 51° south latitude, are yearly visited by thousands of Penguins, who come there for the purpose of breeding. The first of these visitors is the Jackass Penguin (*Aptenodytes demersa*), so called from its braying noise. These birds occupy their burrows in the ground, in which they deposit their eggs, towards the latter end of September, and commence laying, almost to a day, on the 7th of October.

In the neighbourhood of the settlement of Stanley the burrows of these birds run in to a considerable distance, on account, I conclude, of their being so often robbed of their eggs, which are taken out by means of a piece of iron-hoop fastened to the end of a pole. *Aptenodytes demersa* bites more severely than any of the other Penguins. At a distance from the settlement, these Penguins breed in holes close to the surface of the ground. They lay two eggs, of a white colour. Although I have mentioned *Aptenodytes demersa* as coming up to breed in the latter end of September, I must remark that some of them are found on the shores of the Falkland Islands the whole year round, which is not the case with any other Penguin. It has been asserted that these birds crawl on all-fours to their breeding-places. This is not the case; they walk upright; and it is only when they are frightened and hard-pressed that they lose their balance, fall forward, and then make use of their fins and legs to get out of harm's way. The whole of the coast of East Falkland, as far as my experience goes, from Mare Harbour on the south side to Salvador on the north, is covered with these Penguins during the breeding season. I have never seen them making their breeding-holes, but I conclude that they dig them out with their beak.

Eudyptes papua is the next Penguin that "hauls up" (to use a nautical term) at the Falklands to breed. These birds have regular rookeries which they occupy every year. They come up about the same time as *Aptenodytes demersa*, and commence laying almost always on the same day, viz. 7th October. Some of their breeding-places are near the sea, and generally near a freshwater pond; others, however, are several miles inland. Why they should select these latter places, so far from salt water, is a mystery. The grass from the sea to the breeding-ground is trodden down and made into a kind of road, by detachments of these birds of from ten to twenty going to the sea and returning. They make no nest, but lay in a hollow in the earth. They occupy a square piece of ground, and deposit their eggs, two in number, as close to one another as they can sit. When the young birds are old enough, they all go to sea, and only occasional stragglers are found on the coast at any other time of the year. One thing may be noted with these birds, which is, that when their numbers increase, they appear to establish new rookeries close to the old one. None of them breed, to my knowledge, on the south shore of the Falkland Islands, but all their breeding-places are situated on the north and east sides. This bird is called in the Falklands the Gentoo Penguin: whence the name I leave others to conjecture. I may mention, that the ground about the rookeries is covered with small round stones, which these birds eject, on coming up from the salt water, in green masses about the size of a shilling.

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* Communicated by John Gould, Esq., F.R.S., &c.

Aptenodytes chrysocome, the Falkland Islands' Rock-hopper (so called from its jumping from rock to rock), comes up from the sea about the middle of October, and lays the first week in November. Like the other Penguins, they return to the same breeding-grounds. These are situated on high cliffy slopes near the sea, and with a freshwater stream running near, in which the birds constantly wash themselves. They are also, like the Gentoos, continually going to and returning from the salt water. The space occupied by some of the breeding-places is nearly 500 yards long by about 50 broad, and their eggs lie so close together, that it is almost impossible to walk through without breaking some of them. I have often wondered, on disturbing these birds and driving them away from their eggs, how, on their return, they could pick out their own among so many hundreds. Yet this they do, walking back straight to their eggs, and getting them between their legs with the utmost care, fixing them in the bare space between the feathers in the centre of the lower part of their belly, and gradually lowering themselves till their breasts touch the ground, the male bird of each pair standing upright alongside of the female. A Crested Cormorant makes a nest composed of mud and sea-weed, and lays indiscriminately among these Penguins. I was once amused to see three of the Cormorants attack the nest of an absent Penguin and steal nearly the whole of it, adding it to their own. As soon, however, as the proprietor returned, they left off, and the latter did not appear to take any notice of the robbery that had been committed. These Cormorants lay three eggs, about the middle of November. Both *Aptenodytes chrysocome* and *Eudyptes papua* suffer much from the depredations of a Skua Gull (*Lestris antarctica*), which is always on the watch to carry away their eggs; consequently the ground near their rookeries is covered with egg-shells. *Lestris antarctica* breeds contiguously to the Penguin rookeries; but as they do not lay till the end of November or beginning of December (I saw young ones and eggs on the 15th of December), they cannot feed their young on Penguins' eggs, as the latter have all been hatched previously to this: perhaps they steal the young ones.

I have now to remark upon another Penguin which breeds among the Rock-hoppers: this bird is called in the Falkland Islands the Maccaroni Penguin; its technical name I do not know*. It has an orange-coloured crest. In a rookery of Rock-hoppers in the North Camp, I counted fifteen of them among, perhaps, twenty thousand of *Aptenodytes chrysocome*. They only lay one egg to my knowledge; at least, I took one egg from under nine different birds, and many of them were sat upon. They come up and lay at the same time as *Aptenodytes chrysocome*.

XLIV.—*Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro.* By the Hon. THOMAS L. POWYS, F.Z.S. (Part IV.)

[Concluded from page 239.]

160. COMMON THICK-KNEE. (*Œdicnemus crepitans.*)

Occasionally visits Corfu and Epirus in April and May.

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* Mr. Tristram has received from Capt. Abbott skins of this fourth species, which he informs us is *Eudyptes chrysolophus*, Brandt.—ED.

161. Golden Plover. (*Charadrius pluvialis.*)

Common in severe weather in Corfu and Epirus.

162. Ringed Plover. (*Charadrius hiaticula.*)

I observed this species occasionally at Butrinto in February and March.

163. Little Ringed Plover. (*Charadrius minor.*)

Tolerably common in Corfu in April and May, particularly in the Val di Corissia and at Potamo, only remaining a few days in the island.

164. Kentish Plover. (*Charadrius cantianus.*)

Common in Corfu and all suitable localities in Epirus during the winter months, disappearing about the middle of March.

165. Peewit. (*Vanellus cristatus.*)

Very abundant throughout the islands and mainland in winter. I never saw one of this species later than the beginning of March in these countries.

166. Grey Plover. (*Squatarola helvetica.*)

I occasionally saw this species in Corfu and Epirus, in January, February, and March 1857. Some specimens killed in the island in the latter month were in full breeding plumage. I never saw the Grey Plover in large troops, but almost invariably in pairs, or small parties of four or five individuals. This bird has a curious habit, which I do not recollect to have seen mentioned in any work on ornithology, of throwing somersaults in the air, in the same manner as the Tumbler Pigeon and Roller. I noticed this particularly in March 1857, on the Gulf of Arta, about the mouth of the Luro river, where a few of this species are generally to be seen.

167. Turnstone. (*Strepsilas interpres.*)

A large flock of Turnstones flew past the ship as we were going to Antivari, in December 1857, on board H.M.S. Ariel. I never observed this species in Greek waters on any other occasion.

168. Oyster-catcher. (*Hæmatopus ostralegus.*)

Common on the shores of Corfu and Epirus for a few weeks in March and April.

169. Woodcock. (*Scolopax rusticola.*)

So much has been said and written concerning the abundance of this species in these countries, that it is unnecessary for me to add to the mass of information already in print on the subject; but a few words on my own experience may not be out of place here. That part of the mainland which lies opposite to the island of Corfu, and which is usually called Albania, is, properly speaking, Epirus, of which Joannina is the capital, Albania proper being the contiguous province to the north. The country near the coast consists for the most part of rocky hills of moderate elevation, thickly overgrown in most places with long grass, and various species of evergreen scrub and thorn bushes. The valleys are marshy, cultivated in some parts, and in others more or less covered with woods of alder, poplar, oak, plane, sycamore, willow, &c., and in many places a thick undergrowth of blackthorn, briars, sedge, reeds, &c.; the fields are also dotted with patches of tamarisk, thorn, and briars, and intersected by numerous small streams. The Woodcocks generally begin to arrive about the 10th of November, their numbers depending on the state of the weather, and in a good season are to be found in abundance from that time till the 15th of March. I arrived at Corfu on the 24th of December, 1856; the weather was then, and had been for some weeks, very stormy and unsettled; heavy rains had turned the valleys into lakes, and everyone told us that Woodcocks were not to be found. For some days the weather was so bad that it was useless to attempt an expedition to the mainland, and we contented ourselves with wandering about the beautiful arbutus-coverts of the island, occasionally finding a Snipe or two in the low grounds, and hearing of, but very seldom seeing, a Woodcock. At last we could stand it no longer, but sailed about one A.M., on the 5th of January, from Corfu, and on awaking about seven A.M. found ourselves snugly at anchor in the well-known bay of Butrinto. We went ashore, and waded through about two miles of thorn-covert, and had what appeared to me very fair sport, till the rain came down in torrents, and drove us back to our yacht. We were three guns, and our bag at one P.M. contained 21 Woodcocks, 2 Snipes, 1 Water Rail, 1 Little Gull, 1 Common Buzzard, 1 Marsh Harrier, 3 Sparrow-hawks, 1 Barred Woodpecker, and 1 Red-crested Whistling Duck. My companions complained bitterly, saying that it was not worth the trouble of coming over for such a paltry bag, and vowing that they would put up their guns till the weather improved. Now it struck me that the Woodcocks had been flooded out of the wood which we had beaten, and would probably be found on the hills in thicker covert, where they could avoid the drip of the trees; and so it proved, as on the next expedition in which I joined, on which occasion we were bent on the slaughter of Wild Boars and Roedeer, we flushed great numbers of Woodcocks on the hill-sides, in the steepest places and most impenetrable thickets. Forty and fifty couple of Woodcocks had been killed in November 1856, on several occasions, by two guns. The weather improved about the beginning of February 1857, and the Cocks came down again into the valleys, where we allowed them but little peace, and used to bag from ten to fifteen couple frequently, till the end of March, when they left the country. To myself, the great charm of shooting in these countries consists in the variety of birds to be observed, and the power of roaming about in every direction, through a beautiful country, without let or hindrance. To show in some degree the variety of sport to be met with, I subjoin a few extracts from my game-book. Our party consisted generally of myself and two friends. February 8th, 1857, 24 Woodcocks, 1 Hare, 2 Bitterns, 1 Marten Cat;—9th, 20 Woodcocks, 2 Golden-eyes, 1 Snipe;—10th, 38 Woodcocks, 1 Hare, 4 Snipes;—26th, 14 Woodcocks, 5 Teal, 3 Snipes, 1 Hare, 1 Water Rail;—March 5th, 31 Woodcocks, 1 Otter, 1 *Picus leuconotus*;—11th, 2 Woodcocks, 1 Duck, 1 Teal, 1 Garganey, 1 Snipe.

The above sport, with the exception of the 10th of February, occurred in the valley of Vrana, from the anchorages of Butrinto, Kataito, and Pagania: on the 10th of February we shot from Santa Quaranta. In the Gulf of Arta, from about the 14th till the 18th of March, our party of five bagged 204 head, including 2 Roedeer, about 80 Woodcocks, 12 Hares, Wild Ducks, Shovellers, Teal, Garganey, 3 Wood Pigeons, Gadwall, Pochard, Tufted Duck, 1 Solitary Snipe, Common and Jack Snipes, Bitterns, Grey Plover, Water Rails, Spotted Rails, Black-tailed

Godwits, Coots, Grebes, 1 Eagle-Owl, 1 Short-eared Owl, Greenshanks, Redshanks, and Dunlin. I only quote the above extracts to show the sort of sport to be met with in a season which I was assured was the worst for Woodcocks in the recollection of "the oldest inhabitant."

The next season, a very severe one, was much better, but was not reckoned anything very remarkable. My companion and I then devoted our energies chiefly to the pursuit of wild-fowl, and met with tolerable success. To return to the habits of what I once heard an auctioneer term "that popular bird the Woodcock" (he was offering its eggs for sale), it arrives in Corfu generally a week before it makes its appearance on the mainland, and fair sport may there be met with for a few days, in the arbutus-coverts of Strangili, Govino, and Mesonghi. I must now wind up my long digression from the "scientific descriptions of birds," to which we have been informed the 'Ibis' is chiefly devoted, and in conclusion strongly recommend any lover of sport, for its own sake, to spend a winter in Greek waters, and in wet weather to try the hills about Butrinto, Kataito, and Tre Scoglie; in bright frosts, the old woods in the valley of Vrana, from Butrinto to Pagania; and in all weathers, Santa Quaranta, Phanari, and the Gulf of Arta; to wear the strongest jean he can procure, lined with flannel; and, above all, to be uniformly courteous and civil to the natives, who can, and occasionally will be of great service to those who treat them kindly.

170. SOLITARY SNIPE. (*Scolopax major.*)

Arrives in Corfu and Epirus in small numbers in March, remaining about a month in the low-lying maize-fields and vineyards; a few are always to be met with at that season in the Val di Roppa. I have occasionally killed this species in Epirus in September.

171. COMMON SNIPE. (*Scolopax gallinago.*)

Very common in all the marshes of the mainland and the islands, from September till the end of March. In the months of October and November 1857, it was no unusual occurrence for two good shots to bag from fifty up to a hundred couple of Snipes in two days' shooting, in the great marshes of Santa Quaranta. Eighty couple of Snipes were killed in one day, some years ago, at Butrinto, by a gentleman well known at Corfu as the keenest of sportsmen and one of the best of shots. From ten to twenty couple may often be killed in the Val di Roppa, about seven miles from the town of Corfu.

172. JACK SNIPE. (*Scolopax gallinula.*)
Common, but less so, in proportion to the number of the preceding species, than in any country I know.

173. BLACK-TAILED GODWIT. (*Limosa melanura.*)
Occurs sparingly in winter. More common on the Gulf of Arta than in any other locality with which I am acquainted.

174. BAR-TAILED GODWIT. (*Limosa rufa.*)
Not common; occasionally seen in September at Butrinto.

175. PIGMY CURLEW. (*Tringa subarquata.*)
Occurs at Corfu, occasionally in great numbers, and generally in full breeding plumage, about the end of May.

176. DUNLIN. (*Tringa alpina.*)
Occurs sparingly in winter in Epirus and the islands.

177. LITTLE STINT. (*Tringa minuta.*)
Rather common in April and May, particularly on the race-course of Corfu, which is an excellent locality for birds of many species at various seasons. I never shot a specimen of *Tringa temminckii* in this part of the world; but I feel no doubt about having once or twice seen it in company with the present species, on the race-course above-mentioned.

178. SANDERLING. (*Calidris arenaria.*)
Rare; the bird-stuffer brought me three specimens in the spring of 1858, to ask what they were. These were the only birds of this species that came under my observation during my stay at Corfu.

179. RUFF. (*Machetes pugnax.*)
In large flocks on the spit of low land opposite Prevesa, at the entrance of the Gulf of Arta, in March 1857, in company with the Black-tailed Godwits. Not uncommon in Corfu at the same

season. These birds, although usually rather difficult of approach, may be obtained in great numbers by tying a bright-coloured handkerchief on to a stick, and concealing oneself near it. Bright colour seems to have some invincible attraction for them, and they will fly round, and dart down at the object of their curiosity, regardless of repeated shots, and the consequent diminution of their numbers.

180. Common Sandpiper. (*Tringoides hypoleuca.*)

Common at almost all seasons on the rocky parts of the coasts of Epirus and Corfu.

181. Greenshank. (*Totanus glottis.*)

Occurs in small numbers in Epirus and Corfu in winter and early spring.

182. Marsh Sandpiper. (*Totanus stagnatilis.*)

Abundant in March, April, and the early part of May, on the race-course of Corfu. The habits of this species closely resemble those of the Green Sandpiper (*Totanus ochropus*), but it is less shy, and not so clamorous. I have had excellent opportunities of observing closely the habits of this and many other allied species on the race-course, having sometimes seen within a few yards of the spot on which I lay hidden, *Totanus glottis, T. stagnatilis, T. glareola, T. ochropus, Himantopus melanopterus, Tringa minuta, Numenius phæopus,* and *Glareola pratincola.*

183. Wood Sandpiper. (*Totanus glareola.*)

Common, but less so than the above, at the same season, and in the same locality.

184. Green Sandpiper. (*Totanus ochropus.*)

Common from the beginning of September till the end of May, and occasionally seen in June and July in Corfu and Epirus. This and the following species are great enemies to the snipe-shooter, as they are for ever flying round the marshes, and indulging in shrill screams and extraordinary aërial evolutions, thereby alarming many an honest *Scolopax* who is digesting his worms of the previous night, and would, without the uncalled-for interference of these noisy cousins, fall a prey to the sportsman.

185. Redshank. (*Totanus calidris.*)

A great deal too common, for the reasons mentioned above, in winter and early spring, in Corfu and Epirus.

186. Curlew. (*Numenius arquatus.*)

Very abundant from October till April; a few may be occasionally observed at all seasons. I have several times seen Curlews at Corfu, exactly like the common species in plumage, weight, and all other respects, except the bill, which was from half an inch to two inches longer than usual. As far as I could ascertain, this difference had no reference to sex or age; the long-bills and short-bills flocked together, and had precisely the same habits. I never observed this difference in any other part of the world, though the Curlew has always been a favourite object of pursuit with me, and a great many have consequently passed through my hands.

187. Whimbrel. (*Numenius phæopus.*)

Occurs sparingly in April and September in Corfu and Epirus.

188. Slender-billed Curlew. (*Numenius tenuirostris.*)

Two specimens only of this bird came under my observation at Corfu; both were killed on the race-course in September 1857. I obtained a good specimen at Nice in the winter of 1858.

189. Avocet. (*Recurvirostra avocetta.*)

I was shown a specimen of this bird in December 1856, which had been killed a few days previously at Butrinto, and I once or twice heard of others, but never saw one alive myself in these parts.

190. Black-winged Stilt. (*Himantopus melanopterus.*)

Common on the shores of Corfu and Epirus in March, April, and May; generally to be seen in small flocks, standing mid-leg in water, and snapping at the midges and other small insects. This species breeds in great numbers in the marshes of Dalmatia, in the neighbourhood of Spalatro.

191. Purple Heron. (*Ardea purpurea.*)

Common in April and May, and I believe breeds in Epirus, as young birds are often to be seen in July and August.

192. COMMON HERON. (*Ardea cinerea.*)

Common in Corfu and all parts of the mainland in winter. I observed it in August in Albania and Montenegro.

193. GREAT WHITE HERON. (*Ardea alba.*)

Common in Epirus in winter, particularly at Butrinto. Not nearly so difficult of approach as most of its congeners, although I never observed it to skulk amongst the reeds and aquatic herbage, as the last-mentioned species often does. I could not find out that it ever remains to breed in Epirus; but the natives are so singularly unobservant of all birds except the *Anatidæ*, that it is difficult to extract any information from them.

194. LITTLE EGRET. (*Ardea garzetta.*)

Very common in winter on the coasts of Epirus, in which province some few remain to breed. I observed this species on the Bojana river, and the Lake of Scutari in Albania, in great numbers in August 1857. The birds of this species which frequent the shores of the Bay of Butrinto in the winter, and spend the day in wading about the marshes, collect their forces regularly about sunset, and fly in a compact body to the jungles at the head of the lake, where they roost. They appeared to pursue exactly the same course every evening; and I used always to consider their appearance in a body as a sign that it was time to take up my post for shooting Ducks in a small marshy pool between the proper right of the Butrinto river and the rocks which shut in the valley to the north. The Egrets almost invariably flew over this pool from west to east, and generally preceded the arrival of the first flight of Ducks by about ten minutes.

195. SQUACCO HERON. (*Ardea comata.*)

Arrives in great numbers in Epirus in March, and I believe breeds in the marshes of the interior. Very abundant on the Lake of Scutari in August 1857. I found this species the most difficult of approach of any of the *Ardeidæ*.

196. BUFF-BACKED HERON. (*Ardea bubulcus.*)

I saw a stuffed specimen of this bird at Corfu, which was killed at Butrinto; and I think I may speak pretty positively to having once seen two specimens on the race-course in April 1857.

197. Night Heron. (*Ardea nycticorax.*)
Tolerably common in Epirus, arriving in March, and remaining only a short time on its passage northwards. Common on the Lake of Scutari in August, where it doubtless breeds.

198. Common Bittern. (*Botaurus stellaris.*)
Common in Epirus from October till May. Its abundance or scarcity seems to depend on the severity of the weather. I do not think the Bittern breeds in Epirus, at all events not in those parts of that province with which I have any acquaintance, but it is found throughout the year in some of the marshes of Albania and Dalmatia.

199. Little Bittern. (*Ardetta minuta.*)
Arrives in considerable numbers in Corfu and Epirus in April, and remains to breed, leaving the country about the end of September. In Corfu they are often to be found perched in the olives near the marshes, motionless, with outstretched neck, and beak pointing to the sky. More than once I have caught this species with my hand ; and my old retriever often brought me Little Bitterns alive, in the marshes of Butrinto, where I have found the nest in a tamarisk a few inches above the water. The curious habits of this species make it an interesting pet, though I have not found it easy to keep it alive for any length of time. All the birds of this species from Holland, which I have at different times procured in Leadenhall Market, were more or less injured about the eyes.

200. White Stork. (*Ciconia alba.*)
Arrives in Epirus in March, and breeds on the house-tops. Two pairs nested and reared their young annually on the top of the old fort, known as the Aga's house, at Butrinto. The Mahomedan population protect the Stork, and consider it a bird of good omen.

201. Black Stork. (*Ciconia nigra.*)
This species is very rare in these parts. The bird-stuffer at Corfu told me, that two specimens only had passed through his

hands in the course of thirty years. One of these was killed at Butrinto, and the other in the island of Corfu.

202. Glossy Ibis. (*Falcinellus igneus.*)

Occurs tolerably abundantly in Corfu and Epirus in March, April and May. The only locality in which I have myself seen this species is the often-mentioned race-course, where a pair were generally to be found in the months above-named, keeping aloof from the other Waders, and stalking about after the manner of the Herons.

203. Crane. (*Grus cinerea.*)

Often to be heard and seen, passing over Corfu at a great elevation, in the months of March and October. The only spot in these parts in which I have seen this species on the ground was on the Greek frontier, opposite Prevesa, where I fell in with a troop of several hundreds in March 1857. I saw a freshly-killed specimen in a ditch near Corfu on the 2nd of April, 1857.

204. White Spoonbill. (*Platalea leucorodia.*)

Occurs sparingly in Epirus in severe winters. I saw a few at Livitazza in January 1858. More common in Greece about Petalà and the Gulf of Lepanto. I could not hear of the occurrence of this species in the island of Corfu.

205. Flamingo. (*Phœnicopterus antiquorum.*) (?)

I place a mark of interrogation after the name of this bird, as I have never seen it myself in these parts; but the Corfu bird-stuffer described to me a bird which had been killed out of a small flock on the race-course, some years previous to my arrival in Corfu, which must have been a Flamingo. It struck me as curious that this species should be so rare in these parts, as it is abundant in Tunis and Sardinia, and not uncommon in the south of Spain, in all which localities I have myself seen it. I have been assured that the Flamingo occurs in great numbers in winter in the island of Cyprus.

206. Common Coot. (*Fulica atra.*)

Common, and resident in Epirus.

207. Moor-hen. (*Gallinula chloropus.*)

Common in winter in Epirus. I believe a few of this species breed in that province.

208. Spotted Crake. (*Crex porzana.*)

Common at all seasons in Epirus, but more so in September and October than at any other time.

209. Little Crake. (*Crex pusilla.*)

The Corfu bird-stuffer had a specimen of the Little Crake, which was killed at Butrinto. I once flushed a small Crake there in September 1857, which was either of this species or a *Crex baillonii.*

210. Land Rail. (*Crex pratensis.*)

Occurs sparingly in Corfu in April and September.

211. Water Rail. (*Rallus aquaticus.*)

Very common, and, I believe, resident in Epirus.

212. Crested Grebe. (*Podiceps cristatus.*)

Common in winter on the lakes and lagoons of Epirus.

213. Red-necked Grebe. (*Podiceps rubricollis.*)

Rare; occasionally occurs in winter at Butrinto.

214. Sclavonian Grebe. (*Podiceps cornutus.*)

Not uncommon in winter on the lakes of Butrinto.

215. Eared Grebe. (*Podiceps auritus.*)

Very abundant on the lakes and lagoons of Epirus in winter. I believe a few pairs breed among the reeds at the head of the great lake of Butrinto. This species appears to be the most gregarious of the Grebes.

216. Little Grebe. (*Podiceps minor.*)

Common in winter in Epirus.

217. Great Northern Diver. (*Colymbus glacialis.*)

I once unsuccessfully chased four Divers on a small lake at Butrinto, which from their great size must, I think, have belonged to this species.

218. Red-throated Diver. (*Colymbus septentrionalis.*)

Occurs sparingly on the coasts of Epirus and Albania in winter. One of our party killed an immature specimen at the mouth of the river Drin, in the latter province, in December 1857.

219. GREY-LAG GOOSE. (*Anser ferus.*)

Common in February 1858, on the west coasts of continental Greece, about Petalà and the plains of the Acheloüs, where we shot several. I have seen Wild Geese in most parts of Epirus and Albania that I have visited, but could not make out whether they belonged to this, or either of the following species.

220. BEAN GOOSE. (*Anser segetum.*)

Common in winter on the coasts of Epirus and Greece, particularly at Petalà. We used to take up a position on one of the numerous small islands which skirt the little Gulf of Petalà to the north, and had very good sport at wild-fowl of all sorts. The Geese did not come within shot much before dark, but Mallards, Shovellers, Wigeon, Pintail, Teal, Pochard, and Tufted Ducks kept us pretty busy during the day. We did not fire at Golden-eyes, Smews, &c., and when such birds passed us, used merely to exclaim to one another, "Muck." On one occasion we were much excited by the evolutions and music of a small flock of Wild Swans, which, however, declined our acquaintance. Pelicans also would often flap heavily within a few yards of us, totally regardless of green cartridges and B.B. shot. My companion would not shoot at any Ducks whenever there appeared to be a chance of our getting a shot at Geese; but we nevertheless contrived to load ourselves to that degree, that wading through the mud to our boat became a feat by no means easy of accomplishment. The present species was the most common of the three *Anseres* that presented themselves to our guns at Petalà, and I am disposed to think that it is the most abundant of its family in Greece and Turkey; it is far superior for the table to either of the other species. Our bag at Petalà I find to have been as follows:—

February 5th, on the island above mentioned: 2 Bean Geese, 1 White-fronted Goose, 1 Grey-lag Goose, 14 Wild Ducks, 4 Wigeon, 1 Teal.

February 6th, in the plains of the Acheloüs: 14 Wild Ducks, 7 Teal, 2 Gadwalls, 2 Shovellers, 1 Pintail, 1 Pochard, 1 Tufted Duck, 1 White-eyed Duck, 1 Quail, 2 Black-tailed Godwits, 7 Woodcocks, 1 Hare.

February 7th, on our island: 2 Bean Geese, 3 White-fronted Greese, 1 Grey-lag Goose, 16 Wild Ducks, 3 Wigeons, 1 Spoonbill.

February 8th, on the plains of the Acheloüs: 1 Grey-lag Goose, 2 White-fronted Geese, 9 Wild Ducks, 6 Teal, 2 Shovellers, 3 Woodcocks, 1 Hare.

I do not mention this as anything extraordinary, as much more has, I have no doubt, often been done in the same localities, but the above extracts will help to show the variety of sport to be met with in these parts in severe winters; and if any reader of the 'Ibis' should be induced by these facts to try his luck in Greek waters, and should enjoy himself half as much as I did, I shall think that our sport has not been recorded in vain. I consider, with Burns, "that some of the happiest hours that e'er I spent were spent amongst the rushes;" although the adjunct to this happiness mentioned by the poet was in our case absent, unless my old retriever can be considered to have in some degree supplied that defect.

221. White-fronted Goose. (*Anser albifrons.*)

Common in winter in Epirus and continental Greece.

222. Polish Swan. (*Cygnus immutabilis.*)

Not uncommon in Corfu and Epirus in severe winters. Several were shot in the island in January 1858.

223. Hooper. (*Cygnus musicus.*)

The same remarks apply to this as to the above. It is perhaps the less common species of the two.

224. Wild Duck. (*Anas boschas.*)

This species actually swarms in winter in some of the marshes of Epirus and Albania. The best localities with which I am acquainted for wild-duck-shooting are, Butrinto, Phanari, the Luro river in the Gulf of Arta, Livitazza, and last, but by no means least, the great marshes between Santa Quaranta and Delvino. As I have before mentioned, my friend and usual companion, Colonel C——, and I, during the severe weather of 1857–8, devoted ourselves almost exclusively to the pursuit of the *Anatidæ*, often allowing Woodcocks to rise at our feet without further notice than an exclamation from one to the other—"O, don't shoot that carrion," and treating Snipes with the most supreme contempt. Perhaps the best sport of all sorts to be had within easy distance of Corfu is at Santa Quaranta, where Wild Boars, Roes, Hares, and Woodcocks are plentiful in the thickets and ravines among the hills, and wild-fowl of all kinds and Snipes are generally to be found in myriads. Besides this, the above locality has the ornithological recommendation of being the haunt of *Aquila imperialis, A. nævia, A. bonellii, Strix bubo, Falco æsalon,* and (I have now reason to believe) *F. lanarius.* Few parts of the great marsh are impenetrable to a determined sportsman, who of course must be prepared to wade, with the water seldom below his knees, and often up to his middle, the safest place for his powder-flask being the top of his hat. In my opinion, the sport amply repays any amount of fatigue or cold; and from the marsh of Santa Quaranta there is a rough walk of about two miles to the anchorage, which will serve to restore circulation. I cannot resist again giving some extracts from my 'game-book,' with reference to this well-beloved spot:—

On the 15th of January, 1858, we were a party of five, and shot the hill-sides for Woodcocks. We bagged 64 Woodcocks and 1 Snipe.

On the 16th four of our party took to the Snipe-marsh, and the other, in search of Woodcocks, to the fern-clad banks of the small river which separates the hills from the plain. The result of our combined exertions was, 100 Snipes, 11 Wild Ducks, 16 Teal, 26 Woodcocks, 9 Quails.

On the 20th, Col. C—— and I spent the day in the great marsh, and bagged 27 Wild Ducks, 15 Teal, 1 Pintail, 6 Woodcocks, 1 Hare.

21st January. We were a party of six, and shot for Woodcocks. Our bag contained at the end of the day, 81 Woodcocks, 8 Wild Ducks, 2 Teal, 2 Hares.

22nd January. Two guns in the great marsh. Bagged 12 Wild Ducks, 18 Teal, 1 Pochard, 1 Sheldrake.

The greatest amount of wild-fowl killed in one day during the above winter was by a party of three, on the Luro river, about the beginning of February. They brought to the yacht 107 head of Ducks of various species and two Wild Geese. A good many Wild Ducks breed in Epirus and Albania. In the Acherusian marsh at Phanari, without exaggeration, they literally darken the air; but this is not a very good shooting locality, as the best portion of the marsh for ducks is utterly impenetrable to man or dog, and may, for aught I know, contain Hippopotami, Alligators, or Whale-headed Storks!

225. TEAL. (*Anas crecca.*)

Very abundant in winter, arriving about the end of September and disappearing in March.

226. MARBLED DUCK. (*Anas marmorata.*)

I saw a boy at Butrinto with a mutilated specimen of this rare Duck in his hand, which he had just killed on the lake; he said it was alone when he shot it. I once flushed three Ducks at Phanari, which puzzled me very much at the time, but which, I have now little doubt, belonged to this species; and an officer of the garrison of Corfu described to me a small Duck he had killed near Arta, which I think can have been no other but this. The Marbled Duck is not uncommon in the island of Sardinia, and very common at Tunis in January and February.

227. GARGANEY. (*Anas querquedula.*)

Appears in great numbers about the end of February in Epirus and Corfu; remains till April. I think a few pairs breed in the country.

228. WIGEON. (*Anas penelope.*)

Abundant in winter, particularly at Livitazza.

229. GADWALL. (*Anas strepera.*)

Common in winter; the easiest of approach, and by far the best for the table, of the European *Anatidæ.*

230. PINTAIL. (*Anas acuta.*)

Tolerably common in winter, but very wary, and difficult to kill.

231. SHOVELLER. (*Anas clypeata.*)

Common in winter.

232. Sheldrake. (*Tadorna vulpanser.*)

Appears in small numbers in severe winters.

233. Ruddy Sheldrake. (*Tadorna rutila.*)

Very rare. Two instances only of the occurrence of this species came to my knowledge during my stay at Corfu. The bird-stuffer brought me a beautiful specimen on the 17th April, 1857. It was killed at Potamò, about two miles from the town of Corfu. Another was killed at Santa Maura about the same time. The bird-stuffer had never seen this species before.

234. Common Scoter. (*Oidemia nigra.*)

I saw a few of this species out at sea in the Adriatic, off Antivari, in December 1857. It is unknown at Corfu.

235. White-headed Duck. (*Erismatura mersa.*)

Common, and, I believe, resident on the lake of Butrinto and on the lagoons of Nicopolis.

236. Golden Eye. (*Clangula glaucion.*)

Not uncommon in winter.

237. Tufted Duck. (*Fuligula cristata.*)

Very common in winter.

238. Scaup Duck. (*Fuligula marila.*)

I only saw one pair of this species in Greek waters. This was at Livitazza in January 1858.

239. Pochard. (*Fuligula ferina.*)

Very common in winter.

240. White-eyed Pochard. (*Fuligula nyroca.*)

Arrives generally in March in small numbers, and breeds in Epirus and Albania. Occasionally seen in winter, but far from common at that season.

241. Red-crested Whistling Duck. (*Fuligula rufina.*)

This species was common at Butrinto during the first winter I passed at Corfu, but I saw very few in the succeeding one.

242. Goosander. (*Mergus merganser.*)

An uncertain and rare visitor in Epirus.

243. Red-breasted Merganser. (*Mergus servator.*)

Not uncommon, in winter, in Epirus, Albania, and Corfu.

244. Smew. (*Mergus albellus.*)

Common in Epirus in February and March, in immature plumage. Very few adult males are to be seen in these parts.

245. Crested Pelican. (*Pelecanus crispus.*)

Common throughout the year on the coasts of Epirus: breeds at Suttanieh, on the Gulf of Arta.

246. White Pelican. (*Pelecanus onocrotalus.*)

Passes over Corfu to the south in enormous numbers, at the beginning of November. A few remain about the coasts of Epirus throughout the winter.

247. Great Cormorant. (*Carbo cormoranus.*)

Not uncommon in winter on the coasts of Epirus.

248. Crested Shag. (*Carbo desmarestii?*)

A Shag is common at all seasons in the Ionian and Adriatic Seas; but, after pretty careful examination and comparison with Temminck's description, I am quite unable to state whether it is our common species, or the variety known as *Carbo desmarestii*. It is more than probable that I have seen specimens of both.

249. Dwarf Shag. (*Carbo pygmæus.*)

Very abundant in winter in Epirus; appears to have no particular preference for salt water to fresh, as it is often to be found in ditches and flooded meadows far from the sea. I saw this species in Albania in August 1857.

250. Herring Gull. (*Larus argentatus.*)

Common in immature plumage. I have only seen two individuals in the adult dress. The commonest large Gull at Corfu exactly resembles this species in plumage, size, colour of naked parts, length of tarsi, &c.; in short, in every particular except that the primaries, in at least a dozen specimens that have come under my observation, are entirely white. This variety or species breeds on the coasts of Epirus, Tre Scoglie, Livitazza, &c.

251. Common Gull. (*Larus canus.*)

Not uncommon in winter in Corfu and Epirus. I saw one of this species pursue, capture, and devour a Redshank at Petalà, in February 1858.

252. LESSER BLACK-BACKED GULL. (*Larus fuscus.*)

Not common; occurs occasionally in immature, but is very rare in adult plumage.

253. AUDOUIN'S GULL. (*Larus audouinii.*)

A fine specimen of this Gull was killed near Corfu in May 1857. I never saw it on any other occasion, although I am tolerably sure it is not very uncommon.

254. MEDITERRANEAN BLACK-HEADED GULL. (*Larus melanocephalus*, Natt.)

Very common in winter in Corfu, and on the coasts of the mainland; breeds in the marshes of Albania and Dalmatia.

255. LAUGHING GULL. (*Larus atricilla*, Linn.)

Common in winter in Corfu.

256. LITTLE GULL. (*Larus minutus.*)

Tolerably common in winter, particularly in the yacht-harbour of Mandrachio at Corfu. This species arrives about the end of October, and leaves the country about the beginning of March.

257. CASPIAN TERN. (*Sterna caspica.*)

Occurs sparingly in winter at Corfu and on the coasts of Epirus.

258. SANDWICH TERN. (*Sterna cantiaca.*)

Rare; occasionally occurs in autumn at Butrinto.

259. GULL-BILLED TERN. (*Sterna anglica.*)

Not uncommon at Butrinto in January, February and March. I have heard of the nests of this species at Livitazza, and am informed that it breeds in great numbers at Mesolonghi.

260. COMMON TERN. (*Sterna hirundo.*)

Rare; occurs occasionally in spring at Corfu and on the coasts of the mainland.

261. LITTLE TERN. (*Sterna minuta.*)

Occurs sparingly at Corfu at the period of the vernal migration.

262. BLACK TERN. (*Sterna nigra.*)

Exactly the same remarks apply to this as to the above species.

263. WHITE-WINGED BLACK TERN. (*Sterna leucoptera.*)
Common in April and May at Corfu.

264. WHISKERED TERN. (*Sterna leucopareia.*)
Common in winter at Butrinto; breeds in the marshes of Durazzo.

265. CINEREOUS SHEARWATER. (*Puffinus cinereus.*)
Occasionally seen in the channel of Corfu; more common further to the north, on the coasts of Albania and Dalmatia.

266. STORMY PETREL. (*Thalassidroma pelagica.*)
I only once saw this species in the Ionian Sea; this was near Pagania in December 1857.

XLV.—*Further Corrections and Additions to the "Ornithology of Amoy," with some Remarks on the Birds of Formosa.* By ROBERT SWINHOE, of H. M. Consular Service*.

A FEW necessary corrections having again suggested themselves on reperusing my article on the "Ornithology of Amoy," as printed in the 5th Number of 'The Ibis,' I hasten to communicate them to you, that they may appear before the public as soon as possible.

Arundinax canturians, sp. 32, and *A. miniatus* (nec *minutus*), sp. 33, should be again compared with *Salicaria cantans* and *S. cantillans* of the 'Fauna Japonica' before they can be considered as good species. They belong more correctly, I think, to the genus *Lusciniopsis.*

Thamnobia niveiventris, mihi, sp. 44, is no *Thamnobia* at all. I cannot understand how I came to be so mistaken. The description given is that of a female bird, which Mr. Blyth considers to be referable to *Erythrosterna leucura* (Gmel.) of Bengal. All the specimens we procured were females and immature birds until lately, when M. Schlegel shot a male. The extent of red on the lower parts of this individual proves the species to be *Erythrosterna mugimaki* of the 'Fauna Japonica' rather than the Indian bird.

Motacilla lugens (v. *lugubris*), mentioned in the 'Fauna Japonica,' has also been shot here after stormy weather, and should be inserted after *M. luzoniensis.*

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* Communicated in a letter from Mr. Swinhoe to the Editor.

Sp. 57. For '*Turdus advena*,' mentioned here, read '*Turdus daulias*,' to which species the name refers.

Of the other Thrushes alluded to, I have succeeded in identifying *Turdus* (*Merula*) *cardis* of the 'Fauna Japonica.' This bird occurs here abundantly, in both its thrush-like and blackbird-like plumages, with the intermediate grades, and presents a happy link between the two subdivisions of the genus *Turdus*.

Sp. 61, *Garrulax rugillatus*, nobis, is undoubtedly *Garrulax perspicillatus* (Gmelin).

We have since shot in the island *G. canorus* (Latham), the "Chinese Song Thrush," or *Hwa-mei* ("pictured eyebrow").

Sp. 64, *Pycnonotus hæmorrhous*, is "Le Gobe-mouche à tête noire de la Chine" of Sonnerat; *Muscicapa atricapilla*, Vieillot; but, unfortunately, there is another bird of the same genus (the *Ægithina atricapilla*, Vieillot) from Ceylon bearing the same specific name: which has the priority?*

Sp. 87, *Munia molucca*. I find, from 'Shaw's Zoology,' that this species is *Munia minima* (Lath.), *M. molucca* being synonymous with *M. rubro-nigra*.

Sp. 106, *Coturnix chinensis*. This is *Coturnix dactylisonans*. *C. chinensis* is not found in this neighbourhood.

Sp. 115. For *Herodias asha* substitute *Butorides javanicus* (Horsf.), of which species several examples have been met with lately.

Sp. 120, *Nycticorax manillensis*, should be probably *N. griseus*. *N. manillensis*, of which I saw an example the other day in a private cabinet at Hong Kong, is a very different species.

Since the above was written, the following additional species have been met with at Amoy:—

1. A LOCUSTELLA with rigid tibial tendons; probably *L. rubescens*, Blyth; certainly not *L. raii*.

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* The Ceylonese bird appears to have been termed *Ægithina atricapilla* by Vieillot, in the 1st volume of the Nouv. Dict. d. Sciences Nat. (p. 76); the Chinese bird, *Muscicapa atricapilla*, in the 21st volume of the same work (p. 489, and Enc. Méth. p. 822). The earliest synonym of the latter which we can use seems to be *chysorrhoides* (Lafr.) (*Hæmatornis chrysorrhoides*, Lafr. Rev. Zool. 1845, p. 367), and the species should probably stand as *Pycnonotus chrysorrhoides*.—ED.

2. **Euspiza sulphurata** of the 'Fauna Japonica.'

3. **Gallinago**, sp. ?

A large Snipe, closely allied to *G. major.*

4. **Totanus pulverulentus.**

5. **Tringa**, sp. ?

A small *Tringa*, smaller even than *T. temminckii.*

6. **Tringa minuta**, Linn.

7. **Larvivora cyanea**, Hodgson ?

8. **Micronisus badius** (Gmelin).

9. **Charadrius virginicus.**

10. **Lobivanellus inornatus** of the 'Fauna Japonica.'

11. **Centropus**, sp. ?

A small species, first procured from Formosa.

12. **Circus**, sp. ?

A large white, black, and grey species, which I have also seen from Manilla. I took this to be the male of the bird marked *C. æruginosus* in my list. Mr. Blyth identified this latter bird; but as all my examples are females, and I have seen it often in company with the grey bird, I naturally supposed the two to be male and female. Every one knows the difficulty of determining the various species of the genus *Circus*; the comparison of dried skins is not always sufficient; the birds require to be seen in a fresh state. However, I am by no means fully convinced yet of the identity.

13. **Calidris arenaria** (Linn.).

14. **Strepsilas interpres**, Linn.

So much for the birds of Amoy. Now for a few words on the birds of Formosa, concerning which the editor of 'The Ibis' expresses a wish to be informed. Such a task is of course beyond my capability, as I know little more than the coast of that island. It is true, we performed an inland journey of some forty miles, but the commander of H.M.S. 'Inflexible' ran over the ground so hurriedly, that neither the Kew botanist, Mr.

Wilford, nor myself had much time to extend our researches. The immense forests of Camphor-trees that cover the gigantic snow-capped mountains are no doubt productive of numerous species unknown to science; but until the right of travelling is established in China, exploration of such wild fastnesses will be impossible; and even were Chinese Formosa open to Europeans, an attempt to ascend these lovely heights would always be attended with danger, owing to the extreme savageness of the aboriginal tribes. With the exception of the S.W. portion, where birds are abundant, especially Orioles and Drongos, the coast, though green and well-wooded, is comparatively destitute of feathered denizens.

I have no doubt, from the glance I had at the birds of Formosa, that most of our Amoy forms are found in the island. Indeed, I have received examples of most of them from there. The few species that I procured in our last trip in the 'Inflexible' which were new to me I described at Shanghai, in the Journal of the N. C. B. of the Asiatic Society*.

The first bird therein described, *Calamanthella tintinnabulans*, is, without doubt, the *Cisticola brunneiceps* of the 'Fauna Japonica,' which again is perhaps only a local variety of the European species.

C. volitans is a good species.

Prinia striata I should be more inclined now, I think, to call a *Drymoica*. It is much longer than the ordinary *Priniæ*, and has a remarkably long tail.

The Dipper is most likely *Cinclus pallasii*, as I see this last quoted as occurring in Japan.

Garrulax taewanus and *Pomatorhinus musicus* are both good species.

Centropus dimidiatus (?) ("the Woodman") I have since found as a straggler at Amoy, and as a resident at Hong Kong. I am sending you specimens for examination.

Anoüs pileatus requires comparison with *A. stolidus*.

In my "Narrative of a Visit to Formosa," a few wrong names of birds had crept in, and I see that they have been inserted in your remarks (*anteà*, p. 89). Allow me therefore to correct

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* See our reference to this article *anteà*, p. 186.—Ed.

Alauda minuta and *Dicrurus malabaricus,* which ought to stand *A. cœlivox* and *D. macrocercus.*

I cannot believe in the existence of a Parrot in Formosa. None occur in China, unless in the provinces of Se-tchuen and Quangsi. Indeed, the island of Hainan, which produces a *Gracula,* most probably identical with the Javanese species, is not known to contain a Parrot. The Vulture too, which has been said to be from Canton, must have been brought there from the extreme south somewhere. Certainly in the neighbourhood of that city none occur*.

XLVI.—*A few Leaves from a Naturalist's Note-book in Eastern Algeria.* By the Rev. H. B. Tristram, M.A., F.L.S., Corr. M.Z.S.

(Plate XI.)

An oologist is the last man in the world who should complain of 'being used up' in country quarters, and that in the month of April; yet a sensation actually akin to *ennui* had begun to creep over us, for a naturalist's appetite is insatiable. We were domiciled at the little French outpost of Souk Harras, the ancient Thagastum, nestled in the valley of the Medjerdah, the classic Bagradas. The southern spurs of the Atlas rose, tier beyond tier, some densely wooded, some bare and scarped, on all sides of us,—those affording home and protection to the Imperial Eagle, these to the Lämmergeyer, the Griffon, and the Falcon. What though our little auberge might be open and comfortless, and its fare of the scantiest, its roof was as watertight as our tent; there was no watch to be kept at night against lions and Tunisian robbers; and were we not entertained at the sign of St. Augustine de Thagaste, perhaps on the very spot where the great saint of Africa first saw the light?

We had explored the antiquities, we had examined the exhumed marble sarcophagi which fill the little barrack square, and had deciphered the inscriptions which tell the story of the long-lost Thagastum; we had dined with the intelligent though lonely commandant; and had noted how, out of thirty-three houses which compose the settlement, nine were drinking shops. We had had enough of 'civilization' and drunken colonists, and determined to push our reconnoissances further and to resume our camp life in the wilds.

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* The most Eastern locality for a Vulture which we yet know of *for certain* is Siam, whence M. Mouhot has forwarded *Gyps indicus.* There are specimens of a Parrot in the British Museum (*Loriculus puniculus*) labelled as having been obtained in China by Mr. Fortune.—Ed.

Two Hungarian noblemen who had been on a hunting excursion in the south shared our quarters, and had brought back, along with their trophies of Antelope, Gazelle, and Moufflon (*Ovis tragelaphus*), wondrous tales of the abundance of Vultures, Eagles, and Bustards in regions where we had not as yet penetrated. At a cabinet council we therefore determined that Salvin should reconnoitre the neighbourhood for a suitable camping ground where we might examine the habits of the Raptorials at home, that Simpson should push to the south-west for a few days and report on the prospect of desert birds for the following month, while I was to investigate the Cork forests and lakes to the north on the Tunisian frontier, to ascertain the probability of a successful bird-harvest there. At the end of a week we were to reunite and decide on our future movements. Not that we had accomplished nothing at Souk Harras. A fine specimen of Bonelli's Eagle had been picked up on a heap of rubbish in the street. The commandant had sent us an enormous Griffon with its wing broken. The Barbary Falcon and the Red Kite were daily noted, and the Gypaëte poised himself every morning over our quarters. These calls we had duly returned by repeated visits to a range of formidable cliffs, where we could see the huge piles of firewood which formed the homes of three families of Lämmergeyers; but vainly, with the aid of ropes and timid climbers, had we essayed a nearer acquaintance.

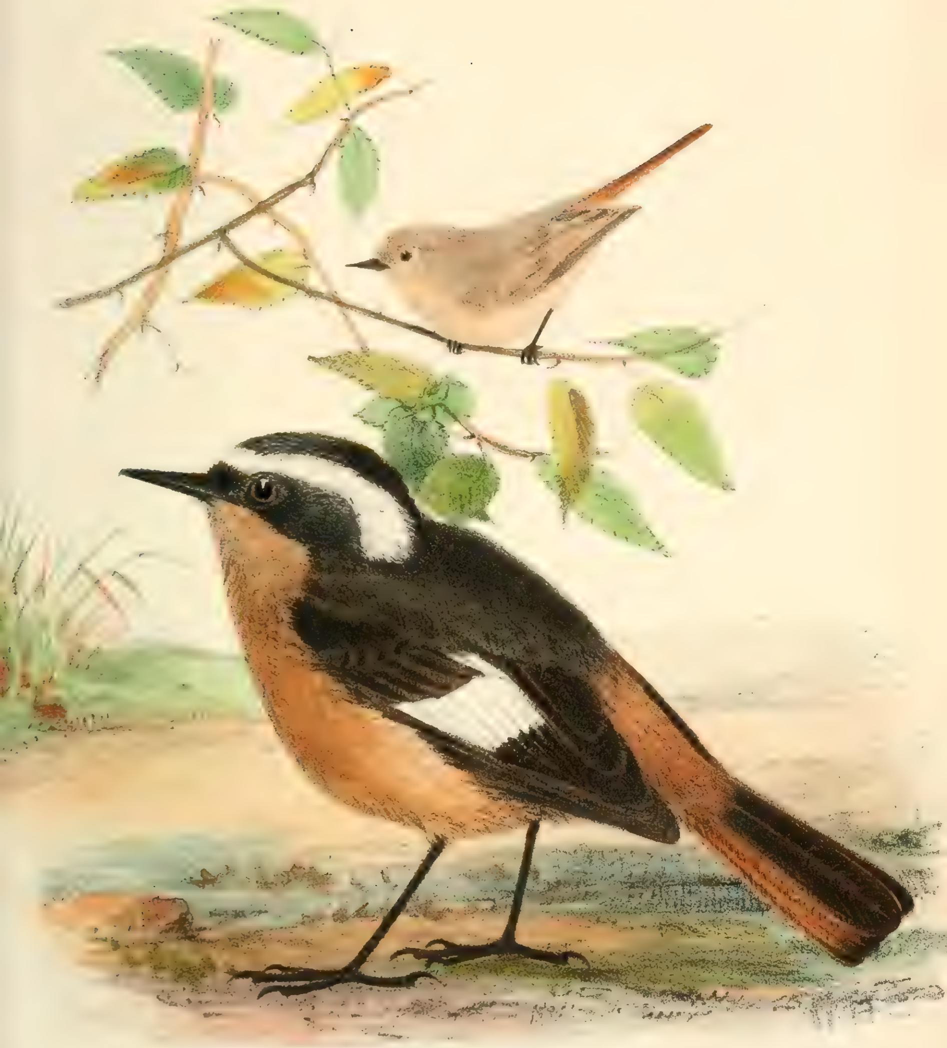
But if the king of Eastern Vultures had baffled us, the less graceful yet equally majestic Griffon had here afforded us our first oological triumph of the season. A French '*colon*,' who, when occasionally sober, plied the trades of carpenter and 'chasseur,' had offered to take us to some accessible Griffons' nests. The rain was descending in torrents when we set out with our guide, and so dense were the clouds that it was impossible to detect even a Griffon at 200 yards. However, after some scrambling in the forest, we approached the edge of a long range of cliffs, from whose fissures and ledges many a mountain shrub and tree stretched forth and partially covered the nakedness of the rocks. Carefully peering over the top, we soon espied, at a distance of some 50 feet below us, the cumbrous heap of sticks which generally serves the Vulture for a nest, but were dismayed to see, instead of an egg, an unfledged downy squab. Had we come too late for nesting? It was an ominous disappointment to commence with. However, "Il y a de plus encore," cries our Frenchman, and we soon made out a second nest a little lower down the cliff. Alarmed by the falling of a stone, the parent bird deliberately rises, slowly stretches her wings, and, with two or three majestic wavings of her pinions, leaves a single egg disclosed to view. Having discovered a narrow ledge by which the nest may be reached, Simpson boldly descends, and reverentially handles the first Griffon's egg he had ever seen *in situ*. But calling out to us that he will wait till the complement has been laid, he clambers up to the top again. He has scarcely arrived there when the mother returns, and quietly sailing in, lets herself drop on the edge of the nest. Here she pauses for a minute or two, grotesquely turns her neck and squints at her beloved egg, first with one eye, then with the other. Next she sniffs at it, turns it over and over, and with fond admiration, taking another look, seats herself down on it. It must be hard set, we remark; and Simpson, resigning hopes of any additional booty, determines to descend again and secure his prize. He had almost reached the nest before the parent bird would quit it; the egg proved to have been incubated for some time, and was the best-marked Griffon's we obtained.

Two days after this capture I set out for La Calle, a distance of ninety miles. I was lightly equipped, and carried provisions and forage but for one day, as with money in the purse we were not likely to starve. Of our three Arab servants, Salah, an ex-Spahi, accompanied me on the second horse,—Mohammed, our best climber, being left to make himself useful about the cliffs with Salvin, while Bilgassem, our trusty Tunisian, was the only one capable of conducting Simpson safely through the independent tribes of the south. Our route lay by the Hammam Weled Zeid, so named from some hot sulphureous springs, where baths

(Hammam) have been constructed. Before reaching them we passed the cliffs where we had vainly besieged the Lämmergeyers, and a long piece of rope swinging in mid air from a projecting peak of rock still told the tale of our unsuccessful assault.

Soon afterwards, on entering a more wooded part of the road, a large Eagle settled among some trees under the rocks. Dismounting I crept up to the spot, and had the satisfaction of watching a fine Imperial Eagle, who plainly exhibited the white feathers of the shoulder. The nest hard by was placed on the flat projecting branch of a great oak-tree growing out of the ridge. It was at least a yard in diameter, composed of sticks, with a few finer twigs by way of lining. The two eggs which I obtained were hard set, and but poorly marked with a few dull-red spots. I have never seen any eggs of the Imperial Eagle which at all approach the richer varieties of those of the Golden Eagle in ground-colour or markings.

Beyond the Hammam Weled Zeid, which we did not reach till nearly noon, was an Arab tribe where Salah had acquaintance, from whom he promised eggs and barley-cake if I could wait for an hour. I sat down on the bank side, letting my horse graze under the trees, and seldom have I enjoyed a more lovely view. The scenery was not grand, but exquisitely rich. Below me, the steaming little torrent of warm water was dashing into the deep glen. The sides of it were clad with pear-trees, figs, wild prunes, and hawthorn, all in full blossom. The sun was bright, the sky cloudless and of the deepest blue, the air charged with the perfume of jasmine, rose, hawthorn, and scented genista. There was nothing in the scenery to astonish, but all was soft, luxuriant, and English. Dreaming of home, I was roused from my reverie by a familiar note, the quickly repeated chirrup of Moussier's Redstart (*Ruticilla moussieri*) (Plate XI.), so well described by its native name of '*Zinzukh.*' I soon descried my little friend, perched like a Stonechat upon the topmost quivering bough of a small Numidian broom, as, regardless of my presence, he turned himself round and round on his perch, and performed various somersaults, to exhibit his rich and softly blended plumage, continuing the while his cheerful though



monotonous note. If ever Libya were in search of an ornithological emblem, Moussier's Redstart should be its emblazon. There is no other bird so truly and strictly "*glebæ adstricta*" as this. The Lämmergeyer and the Vulture are at home, but their presence recalls visions of the Pyrenees or the Balkan. Every warbler on our lists may be found in those thickets, but many of them were born and educated in Europe, and like the Roman of old, the Spaniard of yesterday, or the Frenchman of today, they may return to their northern resorts. The Bustard and the Sand Grouse abound in these arid plains, but they are familiar forms to the Arab invaders from the East. If the Ostrich ventures to his northernmost limits, he is little better than an invader, like his brother Touareg, and is chased as such with as little compunction.

But Moussier is an indisputable '*indigène*.' While one race of man after another has rushed like a flood over North Africa, and left the faint traces of each invasion in a few stranded ruins on the shores, or in the tide-marks of some wrecks of humanity on the mountain sides; long before the first Phœnician galley had entered the Bay of Tunis, and treated with the Numidian king, before either Roman, Vandal, or Saracen had disturbed his retreats, Moussier was here, never disturbed by a restless taste for emigration, nor an appetite for the slopes of Alps or Apennines. I love to watch him as a gentle and genuine Numidian, the one local and peculiar bird. Mauritania (now the province of Algeria) he avoids. The only time I ever found him beyond the frontier of Constantine was once in the Forest of Boghar, and there he was so rare, that of several French local naturalists none could tell me what it was. Towards the east he gradually approaches the shore, not crossing the watershed in Constantine, but at Tunis resorting commonly to the ruins of Utica near the coast, and thence extending himself as far as the oases of the Djereed, Nefta, and Souf, while in all the more southern oases of the M'zab and Waregla he abounds.

Still I hardly expected him at Weled Zeid, and not having, up to this time, met with the nest, I kept careful watch, feeling sure, from the actions of the bird, that his mate was not far distant. Perhaps it is owing to her modest and inconspicuous plumage that the female is but rarely observed, so rarely, that I am sure we noted at least a dozen males for every hen bird we saw. With her brown back and russet-red breast, she is detected with difficulty in the bushes, and, unlike her consort, rarely exhibits herself on the top of a bush or the edge of a stone, remaining generally among the roots of the thickets. Though in distribution of plumage Moussier's Warbler shows a strong affinity to the Redstarts, yet in its habits and manner of perching it is a true Furze-chat, and I fully agree with Mr. Salvin's opinion (Ibis, i. 307) that it is more of a Chat than a Redstart.

After a long search I discovered the nest, with a single egg, artfully concealed near the base of a small *Thuja* bush. The nest is very warm, rather loosely built, with a slight skeleton of very small twigs, and a thick lining of grass, wool, cow's hair, camel's hair, and many feathers, chiefly Hoopoe's; within this is a very neatly laid lining of fine hair. The nest is not so compact as those of the Whin- and Stone-Chats, but very like that of the Redstart. But the eggs I know not how to describe. They are white, with the faintest tinge of bluish-green, unlike any others I can recall, but approaching in shade some of the more delicate hues which are found in the eggs of some of the Egrets, and rendering the bird a beautiful link between the Wheatear and Tithys Redstart. It does not appear that this bird is anywhere even partially a migrant, nor could I ascertain that in any locality it is more plentiful at one season than another. I have seen skins, obtained by Mr. Fraser near Sousa, some years before it was described in 1852 by Leon Olph-Gallard*; but this is not the only instance in which a discoverer has been anticipated, and lost his honours through his own delays.

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* Mr. Fraser informs us that he obtained his specimens of this bird, which are now in the British Museum, in 1847. M. Leon Olph-Gallard first described it at a meeting of the Société Nationale d'Agriculture, d'Histoire Naturelle et des Arts, of Lyons, held on April 2nd, 1852, from specimens procured by M. Moussier in the province of Oran, under the name *Erithacus moussieri.* See 'Annales de la Société Nationale d'Agriculture,' &c., for 1852, pl. 2. A translation of this article into German will be found in 'Naumannia,' vol. ii. pt. 3. p. 68, with a figure, which is better than the original. During a visit to Tunis in the month of February 1859, we found Moussier's Redstart not uncommon in the vicinity of Oudenah—a day's journey south of Tunis, and between the latter place and Zaghouan it was often seen at the road-side, perched on the ground or on a small bush.—Ed.

Salah had long been waiting with hard-boiled eggs and butter-milk, when I obtained my prize, and we soon were in saddle again for Bou Hadjar, a Spahi station some sixteen leagues further on, where I had heard there was an officer, on whom of course I proposed to quarter myself. Spahi stations here serve the traveller's purpose (if he has letters) like monasteries in the remoter parts of Italy; but there is much greater difficulty in reimbursing the officer, as he keeps no poor's box in his doorway. The remainder of our day's journey lay chiefly along the gorge of two streams which flow to the Mediterranean, the Wed el Kebir and the Louledjeah, and by a path on which no English huntsman in cool blood would think of risking his neck. But our trusty, sure-footed Arabs walk without slipping across a long sloping rock. The scenery was rich and varied. Rocky glens, open glades, here and there patches of wheat, smooth valleys clad with luxuriant herbage, groves of wild olive and cork, the whole backed by mountains, gently rising on each side, which are covered with forests, not close like those of Sweden or Canada, but open and loose, affording many breaks, and composed of a great variety of trees, cork predominating, with its gnarled limbs and dark foliage, but largely relieved by the paler tints of magnificent ash-trees, all now (April 14) in full leaf. The ash seems to be precisely the same as our English species. There is, besides, a tree very closely allied to the English oak, ilex, chestnut, and a vast undergrowth of richly coloured shrubs—arbutus, myrtle, bay, jasmine, white and yellow broom of many species in full blossom, and as brilliant as any furze. I found one knoll covered with an exquisite orchis unlike any I ever found elsewhere—of a very pale lemon-yellow, with a powerful scent resembling that of jasmine. The flower was in shape like the figure of *Orchis longicorna* in Desfontaines' book, but much larger, and all of this spotless primrose colour, except three or four very faint dots on the lip. Leaving the glen, about six o'clock we came out upon a plain ready for the scythe, covered with scented tulips (*Tulipa celsiana*), pansies, scarlet and blue anemones, &c. In the midst of this plain stands a square redoubt, Bou Hadjar, at the door of which I met a bluff rough-looking officer in gardening costume, and invited myself to be his guest for the night. He introduced me to his subaltern and doctor; for they mustered three. The fort had been established for three years, but he told me I was the first traveller they had seen. They are three lonely men with their seventy Arab troopers, close to the Tunisian frontier, which is but two miles distant, but which they intend '*to rectify*' at the next act of trespass committed from the other side; meanwhile they occupy themselves chiefly in gardening and poultry rearing. They were decidedly oologists, for five Turkey hens were sitting in boxes in their mess-room, and many hens in the barrack hall, while their garden showed great taste and skill with small means. They pointed out some curious instances of degeneracy in flowers from France. All their ranunculi, of which they had a good show, the second year become crimson, and their verbenas all run into pink. They had, however, a goodly collection of roses in bloom.

There are some Numidian tombs in the hills near, where I copied two Numidian or Punic inscriptions. The doctor accompanied me, in hopes of showing me also the nest of *Picus numidicus*, but we were too early for them, although he shot for me two fine male specimens.

The next morning I was off before any of my hosts were up. The road today left the forest, and wound for some miles through open valleys with hills covered with scrub, and tall trees occasionally relieving them. On one of these I observed a dark-plumaged bird perched, which I took for the Black Kite, till on its taking wing I imagined I had found the Common Buzzard of Europe, for it had none of the ruddy hues which mark the *Buteo tachardus* of the country. After quietly following it for a long distance, I had an opportunity of examining it again more closely as it rested on a bare tree and scrutinized me in turn. There was no mistake now—I was looking at my little friend the Booted Eagle, *Aquila pennata*, but was not able to secure him, or to discover his nest, if he had one.

About eleven o'clock we descried an Arab camp at some distance, and feeling very hungry, I sent Salah on foot to report on the chance of meeting with hospitality, while I remained concealed with the horses. In half an hour he returned, and reported the Sheik "meleia bezzaf" (very good), as proved by an invitation to breakfast. I trotted down, was met by two Arabs, conducted into an irregular square of tents, and when I had dismounted, was led under the Sheik's tent, where mat and cushion were already spread for me. The horses were also introduced under the same roof, and a large bundle of green fodder laid before them. There was no partition within, contrary to the usual custom, so I could survey the domestic arrangements at my leisure. The Sheik, a young man, seemed to have three wives. The elder, and evidently the mistress, as she made and served the coffee, might be about twenty-five, but looked as all Arab women of that age do, withered and forty-five. The two others were baking cakes and frying eggs in butter for me, and seemed about fifteen or sixteen years old. They were decidedly good-looking, and each with a baby tied in a bundle on her back, so as not to impede work. The goats and cows were brought in and milked by the two pretty wives at my feet. After our simple feast, the Sheik produced pipes, over which we carried on a broken conversation, the drift of which, on his part, was that the Inglez were very good friends of the Sultan, and once drove his enemies (here making a peculiar grimace) out of Egypt; and on my part, that I wanted the eggs of *Rachma* and *Nissr* (Egyptian and Griffon Vultures), and hoped he would have some for me on my return in four days, when he should be richly rewarded for his exertions. The pipe ended, we started again, and after a few miles' ride, during which my horse cast a shoe and became dead lame, we re-entered the forest. The cork-tree predominates, and as we approach the coast, is used, though without system, and as a common right, by various tribes. The trees are peeled, *i. e.* the stem from the ground upwards, but seldom the large limbs, once in about nine or ten years. The operation does not improve the appearance of the forest for the first two or three years. No continuous line of bark is left; but the life of the tree seems to be preserved by the thin membrane which is left inside the bark. We passed an Arab camp employed in barking and stacking the cork. All these forests are claimed by the Empire as '*domains d'état*,' and are let to French companies, who have scarcely yet begun to work systematically. The first crop of cork in these forests is considered almost valueless, owing to the hardness of the bark on the old trees; they should be barked regularly every seven years, before the cork becomes too hard. The Arabs injure its quality and often damage the trees by firing them in order to make them peel more readily. When the working of these forests has become systematized, they ought to yield enormous profits, as the companies to whom they are let pay only nominal rents, and the quality of the produce is said to be equal to the finest Spanish samples.

The country through which I rode for these two days must now be very like what Britain was before the Roman invasion. The oak and cork forests, the narrow, rapid streams, the undulating hills, the dells, the forest glades,—the very presence, here and there, of blue-tattooed Arabs in their burnouses, all combined to recall the descriptions of ancient Britain. One had presented an exact idea of what a rich hilly country is by nature, and what man can make it. The very district through which we rode was once as well cleared and cultivated as England is now, and if Frenchmen *could* colonize, such slopes and valleys would soon be dotted with homesteads.

Soon after re-entering the forest, I had my first and probably my last rencontre with a lion. Observing a line of cliff about half a mile to the right with a pair of White Vultures hovering over it, I dismounted in hope of finding the nest, and told Salah to hold the horses and to follow on as he heard my signal whistle; for I wished to scan the rocks, which seemed to extend for a mile or two parallel to our track. The ground proved much more difficult than I had anticipated. Before I had proceeded far, I was in a dense thicket of tangled brushwood, through which the trees had forced their way, without giving any idea at a distance of the mass of obstruction below them. Tired, torn, and pricked, I continued to creep as best I could under this matwork, till at length I came upon a little dry watercourse thickly arched over by shrubs,—a sort of tunnel as it were, up which I might creep more easily to the rocks. I took advantage of it, but after proceeding a little way suddenly saw, about ten paces in front of me, a young lion, not taller than a large St. Bernard dog, but very much heavier and more stoutly built. I instantly, as the beast rose and stood before me, fired one barrel right in his face, before I had at all realized what it was, and the second trigger was pulled ere I perceived the mistake I had made. One barrel was charged with No. 4 shot, the other with a green cartridge of the same. The beast seemed perplexed for a moment, for both charges had evidently lodged in his face, and perhaps in his eyes, as he sprang up with a note something between a howl, a roar and a wail, with a considerable undercurrent of a growl. My first impulse was to follow; my second, on which I promptly acted, was to make a precipitate retreat sideways into the tangle, and creep up as speedily as love of life would enable me. I had hardly re-entered the cover, when I felt rather than saw the young lion rush down the tunnel. Probably, and most providentially, the shot had blinded him for an instant. I now began to reflect on the hastiness and folly of my proceeding, for as the beast could not have been two years old, his mother was probably not far off, and I certainly was not in a fitting condition to pay so grand a lady a morning call alone, and without a single ball by way of a card in my pocket. Regardless of dignity, or the reputation of courage, I therefore withdrew as fast as the brushwood would permit, and was indeed thankful to gain the open glade, where in broad daylight I was safe. But Salah and the horses had gone on, and I had a weary tramp before my whistle recalled them. I found that the rascal, on hearing the report and the roar of the wild beast, had guessed the affair, and dearly loving a whole skin had taken care to put space between danger and himself. He drew a comical picture of his ruffled feelings for the last half-hour, which I will venture to give in the vernacular which was our vehicle for the interchange of ideas. "Ah, Sidi sebaa" (*master* lion; for an Arab always speaks respectfully of the lion) mangiar Sidi Inglez. Salah mafish andar imshi fisa el mercanti. Salah andar—Arbiah volé hassan—Sidi sebaa mangiar Salah. Salah resté um ploré:"—which, being translated from the *lingua Sabir,* means—"Ah, master lion eats master Englishman. Salah cannot run and go to help his master; for if Salah goes, the Arabs will steal the horses, and the lion will eat Salah. So he stayed and wept." What a truly Arab view of the case! The very man to rely on at a pinch! I half suspected his cogitations had gone further, and that he had begun to reckon how much the horses and kit would fetch in piastres across the Tunisian frontier, as soon as the lion had finished his meal. Not that the lion will ordinarily attack a man in the daytime unless he is provoked to the fray. When surprised in their lairs they invariably slink off, and are with difficulty brought to bay, as my companions often found to their disappointment. Soon after this adventure an old jackal stood coolly waiting in our path till we came up, when I quietly shot him dead from the saddle at a dozen paces. Indeed this seems a favourite spot for wild beasts of all kinds, as there were numerous traces of boars, and we were told that leopards were very common. An hour before night-fall we reached El Tarf, a Spahi outpost, where I obtained a shoe for my horse, and found we had a ride of five leagues further to reach La Calle. We pressed on across a plain, and after crossing the Wed Kebir by a deep and somewhat dangerous ford, soon struck into the high road from Bona, a good carriage-road by the side of a lake, and then through a cork forest up to the edge of the little town, which we reached long after dark.

The next two days were devoted to a careful examination of the various lakes which lie to the back of the frontier town of French Africa. My investigation did not encourage the idea of an ornithological foray on these quarters. There were Ducks in plenty, but very wild, as might be anticipated where French chasseurs were at hand; and I failed to discover either *Fuligula rufina*, *Anas marmorata*, or *Erismatura mersa*. Pochard, Gadwall, Mallard, Shoveller, Teal, and *Nyroca* were the species I recognized. Herons abounded, but only *Ardeæ russata* and *ralloïdes*; the Great Egret, our principal desideratum, and the Glossy Ibis being absent. It was pretty evident, from the frequent report of fowling-pieces, that not much nidification could here be conducted with comfort or safety, and so, after wading among the swamps, and admiring whole morasses covered with that most glorious of ferns, *Osmunda regalis*, whose fronds I gathered *ten feet* in length from the foot of the stalk, but which held no promise of sheltering either Savi's or Cetti's Warbler, I resigned all designs upon the feathered inhabitants of La Calle.

The environs of La Calle afford more objects of interest to the marine naturalist, as it is the resort of many Neapolitan coral-fishers, who form a considerable portion of the population, while another source of its trade, besides cork, is from the produce of some very rich lead-mines in the vicinity. But as these are on the frontier line, the workmen are locked up every night in a sort of fortified barrack, and a guard is mounted at sunset at the entrance to the mines, upon whom the mountaineers have frequently made descents, and succeeded in carrying off supplies of lead.

The Algerian Jay (*Garrulus atricapillus*) and the Great Spotted Cuckoo were my only captures on my way back to Bou Hadjar, as I carefully avoided paying a second visit to the lions; but after resting a night with the hospitable Spahis, I determined on a bivouac in the cork forest for the next day, as the weather rendered a tent unnecessary, and forage was abundant. We picketed our horses for the night in an open glade, and slept comfortably under a cork-tree, in the branches of which hung an Arab bee-hive. The collection of honey appears here to be one of the principal employments of the nomads. The bees are not owned individually, but all those which settle in the district claimed by the clan are its common property. To entice them, one sees continually, hung up among the trees, hives simply constructed of a large circle of cork about a foot deep, and with an imperfectly fitted lid of the same substance slightly fastened over the top. These hives are quite open at the bottom, and, suspended from a bough, are secure from the attacks of quadrupeds. Perhaps a third of those we noticed were tenanted. The bees are never destroyed, but towards the end of the season the Arabs go round, and, with heads enveloped in their burnouses, cut out with impunity as much of the comb as they think fit.

In this spot the Woodpeckers abounded, especially *Picus numidicus* and the Green Woodpecker of North Africa (*Gecinus vaillantii*). This latter differs but slightly from our European species, and seems to bear the same relation to it that ours does to the *Gecinus canus* of the North. In habits and voice it exactly resembles its congener. The Lesser Spotted Woodpecker I also saw, but by no means so abundant as the others, of whom I procured several specimens. We were too early for the nests of any of them. The Roller had returned to his summer quarters and might be heard and seen everywhere, performing his strange gyrations and dropping on the tallest tree within reach for an instant or two with his loud discordant shriek. As evening drew on, the Red-necked Goatsucker (*Caprimulgus ruficollis*) flitted about the glades; and the note of the Scops Eared Owl floated on the air, with its plaintive 'Maroof, maroof,' from which it derives its local appellation. But in this spot, and in this only, I found in abundance that most beautiful of European Lepidoptera, and almost the rarest, *Thaïs medicaste*, lighting continually, with brilliant yellow and red wings, on a species of Centaury. Butterflies are by no means abundant in North Africa, and the scarcity of Lepidoptera contrasts strongly with the endless variety and profusion of the Coleoptera.

At dawn we were again in the saddle, and on our way obtained a single egg of the Egyptian Vulture, but had the pleasure of watching for some time a pair of Tawny Eagles (*Aquila nævioïdes*), of which, though a young one (now in the Zoological Gardens) was once brought to us, we never obtained the nest. In its flight, it seems in no way to differ from the Spotted and Golden Eagles. On reaching Souk Harras, not very richly laden, my principal captures having been two eggs of the Imperial Eagle, and one of Moussier's Redstart, with a few interesting skins wrapped up behind my saddle, I found our camp was removed to some distance, and so put up at our old quarters in the auberge. The commandant, however, hospitably invited me to dine, to meet the curé and another young abbé. The ecclesiastics discussed the Arab population, whom they, though professedly missionaries, considered beyond all hope of conversion, and therefore never made the effort. The commandant, with a dash of quiet, subacid humour, entered into the conversation, and remarked that doubtless such was the opinion of our native St. Augustine, whose mantle had fallen on the curé. He added, that the earlier life of St. Augustine seemed carefully fol-

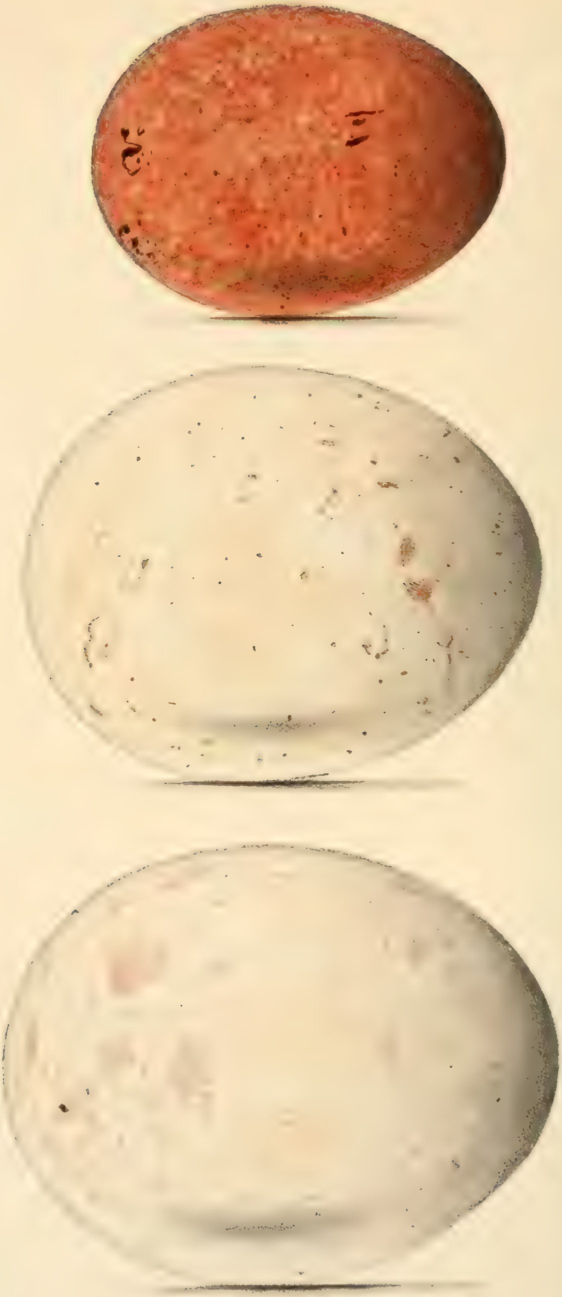

Fig 1. [illegible]

[illegible]

IMPERIALIS.

lowed by the Christian flock of Thagastum; but that it must be a consolation to the curé to feel how much nearer he was to his predecessor than the Pope to St. Peter, as there have not been half-a-dozen successors in the line between them.

The next morning I set out on my tired steed for our new camp at Kef Laks, where Salvin had been hard at work, and where we made our most successful forays, of which my friend has already given an account to the readers of 'The Ibis.'

XLVII.—*On the Nesting of* Aquila imperialis *and* Falco sacer.

By W. H. SIMPSON, M.A., F.Z.S.

(Plate XII.)

LATE in the afternoon of the 26th of April last, having driven across the treeless plain of the Dobrudska, I descended from the open plateau, which, in the part now alluded to, has a breadth of about forty miles, upon one of the small valleys communicating with the Danube. The bottom of this valley, like that of many others on the south side of the river east of Silistria, is on the same level as the Danube itself, the waters of that river during the spring and summer floods flowing back naturally for several miles towards the Turkish coast of the Black Sea. A portion of the valley is consequently converted into a series of swampy lakes, communicating with the river by means of a deep and narrow canal, the mouth of which has recently been banked up, in order to prevent the Danube from inundating the valley. Conformable to the course of this canal is a line of stout pollard willows, of no great height, which however, stunted as they are, afford the finest specimens of the arboreal world to be seen between here and the sea-coast. Low cliffs of limestone flank portions of the valley about the point where the Araba road descends into it; in these cliffs it was supposed that *Vultur cinereus* might be found breeding, though that supposition turned out to be incorrect.

At this spot I had quitted the Araba and joined two friends, who had come to meet me on horseback, when our attention was immediately drawn to a large nest that completely filled the boll of one of the aforesaid pollards. It was not very conspicuously apparent, as the branches, now thickening and becoming greener every day, formed a sort of leafy screen round the nest, which would have been well concealed a fortnight later. One of my friends rode up to the edge of the canal which ran between us and the tree, when forthwith two large Eagles very leisurely turned out within pistol-shot of him, and then, after flying within a hundred and fifty yards of our position, alighted on the brow of the adjoining hill. Judging from the light colour of some portions of the plumage, it was clear at once, even to the naked eye, that the birds were not Golden Eagles; yet I was at first much puzzled what to make of them, never having seen *Aquila imperialis* on the wing before.

These birds, on being examined through the telescope (for after the first alarm we never could get near them again), exhibited a variegated colouring, in which darkish-brown was much relieved by tawny, especially about the head and shoulders. The breast appeared very dark; but this might arise from the peculiar light which was thrown upon the birds by the setting sun. The cere exhibited a bright straw-colour, and appeared very large. The whole colouring was so different from the uniformly dark character which the mature *Aquila chrysaëtos* presents on the wing, that I felt sure the birds in question could not be of that species. It was of course still more easy to perceive they were not Sea-Eagles, and their size was sufficient to preclude them from being confounded with any of the smaller known European Eagles. Therefore on negative, if not on positive evidence, they stood convicted of being Imperial Eagles. Subsequently I saw another bird, evidently of the same species, sitting on the top of a hill overlooking an island in the Danube, but was never able to obtain a specimen. The Golden Eagle was never seen by me in this locality, though my friend has noticed a "black Eagle," which would appear to answer the description of the small dark variety of *Aquila chrysaëtos* which sometimes occurs in the south-east of Europe.

One would imagine that an Eagle's nest in a pollard ten feet high was not difficult to find; yet many had passed that way daily without noticing it. Still less difficulty attended the capture; all the romance usually attaching to such a feat disappeared. Nothing remained, after due and proper identification, but to walk up and take possession. The nest was of a good size, its exterior circumference being, at a guess, 15 feet; the interior was slightly depressed, but only enough to keep the eggs (two in number) from rolling out. It was lined with wool, which rested upon an immense circular platform of sticks entirely filling up the boll of the pollard, from which the young willow-branches sprang upwards in a circle all round the nest. By this means the entire structure was enclosed in a sort of arbour, which would screen the birds from the wind and sun, and from general observation. The eggs, which were slightly incubated, resemble each other considerably; the one figured (Plate XII. fig. 3) measuring 2·9 in. by 2·2 in., and being of a uniform dull-white colour, with frequent marks and scratches and occasionally larger blotches of pale brownish-grey.

On the evening of the 29th another fortunate discovery was made by the same party, and, this time, of the nest of a bird, whose eggs, it is believed, were almost unknown previously in authentic cabinets. We were strolling on a low flat island in the Danube, the edge of which is well covered with tall poplars and other trees. Opposite this belt of trees, and across the river, the Turkish shore rises pretty steeply to a level with the plateau of the Dobrudska, whilst behind, towards the mainland of Wallachia, there stretches an immense tract of low ground, partly swamp, partly forest, and partly open plain. A nest of *Milvus ater* had occupied us for a short time; but on getting close to the river again, in a place where the trees are very tall, and not thickly grouped, my friend and *cicerone* drew our attention to a good-sized nest, which was placed about one-third of the way up a tallish poplar. The nest was resting upon a large branch close to the boll of the tree, and appeared exceedingly easy of access. Whilst my friend was climbing towards it, the bird slipped off, and was shot immediately. It proved to be a female *Falco sacer*. Of this I was not quite certain at the time, being then unacquainted with the distinctions between *Falco lanarius* and *Falco sacer*, though the size inclined me to decide in favour of the latter. The nest was not very much larger than those of the numerous Hooded Crows we had already examined, but was deep and comfortably lined, appearing, however, from the outside as like a large Crow's nest as one bundle of sticks is like another. The eggs, four in number, were slightly incubated. In size, they seem to be intermediate between those of the Peregrine and Gyr-falcon, being, however, longer in proportion to their breadth. Two of them are light in colour, the other two much darker. One of the latter is accurately represented in the accompanying plate (Plate XII. fig. 1). It measures 2·2 in. by 1·6 in.

The male bird was well observed shortly afterwards. Sitting, utterly motionless, on the top of a dead tree, with his head turned over his shoulder, he seemed so mournfully conscious of the catastrophe which had befallen his family, that I felt utterly ashamed of having added murder to robbery in my desire to possess myself of an unknown bird. If the gun had still been in my hand I could have shot him easily, as he then seemed indifferent to his fate, but it so happened that he flew away before that weapon actually arrived, and thus escaped being involved in the ruin of his household.

This was the only pair of *Falco sacer* ever seen by me or by any of my friends in this part of the country. I am therefore induced to believe that the species is rare even here, though the bare and treeless chalk downs of the Dobrudska afford innumerable Bustards, both great and small, if that be the food they covet.

The second figure of the accompanying Plate, which has been prepared by Mr. W. C. Hewitson, represents the larger of the two eggs of Bonelli's Eagle (*Aquila bonellii*), concerning the taking of which I have already given full details in the last number of 'The Ibis' (see *anteà*, p. 291 *et seq.*).

XLVIII.—*Further Observations on some of the Birds of Western Greece.* By W. H. Simpson, M.A., F.Z.S., &c.

Amongst the lesser birds of prey which frequent the neighbourhood of Mesolonghi and the lower parts of Western Greece generally, *Circus æruginosus* and *Circus cyaneus* are very conspicuous, especially in winter. *C. æruginosus* breeds in the great reed-fen, which forms an almost impassable barrier both to the sportsman and naturalist below the fountain issuing from the base of Aracynthus, in the vicinity of the salt-works. It would be difficult to go out anywhere on the level grounds of this region, or on the still more extensive plains of Northern Elis across the gulf, without seeing several Harriers skimming the lagoons and swamps and marshy fields, ready to snap up an unwary bird. They may be considered an especial feature ever present in the landscape of the snipe-shooter, often tempting him to waste a shot upon their worthless carcases, and, above all, recalling to his mind the traditions he may have heard from the older race of fen-men of those halcyon days when Ramsey Mere, Ugg Mere, and Whittlesea Mere were in their glory,—days when the Bittern was yet booming in the reeds at home, and when the early collectors could gather a capful of Harrier's eggs as a May-morning's work.

C. cineraceus was not observed here; it is considered to be a rare bird in Greece. With regard to *C. pallidus,* which the German naturalists at Athens consider to be of such frequent occurrence, I cannot say that any specimens fell under my notice: during the winter certainly none. One or two small birds, which seemed to be of a lighter colour than usual, were shot, but they turned out in every case to be specimens of *C. cyaneus.* There are male specimens of *C. pallidus* in the museum at Athens, from the neighbourhood of that city. It is therefore probable that the Pallid Harrier may occur more frequently on the eastern side of the Hellenic peninsula, which differs considerably in its ornithological character from the western side. Nor is this to be wondered at, when we take into consideration the very great difference in climate and vegetation which distinguishes the two regions—a difference not to be found within an equal space in any part of Europe. *Vultur cinereus* affords another instance of this. It is not unfrequently obtained in Attica, where possibly it may breed; whilst in Southern Ætolia, where *V. fulvus* abounds, and *V. percnopterus* in spring and summer is not uncommon, no single instance of its occurrence ever came under my notice, or of that of any one on whose testimony reliance could be placed. If there is any record of a Black Vulture having been seen in these parts, it has been most probably an immature specimen of *Gypaëtus barbatus*: the difference in shape might not be observed at a distance.

The Kites are remarkable chiefly for their absence. Of *Milvus regalis* I noticed a single specimen, apparently on passage, near Angelo Castro, towards the end of February; but never one of *M. ater*. This is the more surprising, as the latter species is of frequent occurrence in Turkey, especially on the Bosphorus, where it is the hawk most commonly seen in spring and summer, ever sailing in groups of three and four over the ships in the harbour of Constantinople. Indeed, a rookery of them (if such a term be applicable) is reported to exist in some of the trees of the old town. Another raptorial bird remarkable for its scarceness is *Circaëtus gallicus*. It is said by Von der Mühle to be extremely common during summer in Greece, *i. e.* in Eastern Greece, with which he was best acquainted. This is perhaps the most reptile-eating of all the birds of prey. Its place is supplied by the Spotted Eagle, so numerous in this district. The only *Circaëtus* I ever saw in Western Greece was in the lower valley of the Alpheus. Not far from the same spot, and hard by the ruins of Olympia, I also came across the only colony of *Falco vespertinus* seen during our tour. There were four pairs, very tame, and evidently quite at home in the park-like trees with which that beautiful valley abounds. Diligent search was made for their nests (this was before the middle of May); but the natives assured us that, although the birds spent the whole winter and spring there, they never bred, and that those which we then saw would go away directly.

Towards the middle of March the Little Kestrel (*Falco cenchris*) begins to arrive, and presently takes up its abode, often in considerable numbers, in the villages and ruins upon the plains. Whilst the Common Kestrel, which occurs all the year round, dwells in the rocks and remoter ruins, breeding generally in single pairs, this species prefers more inhabited places, and, like the Swallow, trusts to mankind. In Eastern Greece, one of its favourite localities is the renowned ruin which crowns the Acropolis Rock at Athens. There, in company with the "Bird of Minerva" (*Athene noctua*), it finds a secure retreat in the remains of Minerva's noblest fane, and in the rocks and crannies of that most ancient wall, in which so many nations have had a hand, from the days of the Pelasgi to those of the Venetians and the Turks. The traveller, after he has paid his devotions to the Parthenon and Erechtheum, and after he has feasted his eyes upon the magnificent panorama which that memorable spot commands, can hardly fail to notice with admiration the evolutions of these elegant little Hawks, which are hovering above him and below him in every direction. Most of the villages in the marshy plain near Mesolonghi have their colony of *F. cenchris*, and notably those in the neighbourhood of the Phidaris, where the insects abound on which they feed. Each of the favoured villages will have from half a dozen to a dozen pair. They breed generally under the tiles of a house, sometimes in a position where it is no easy matter to introduce the hand. There is no regular nest, but the eggs (four, and rarely five, is the complement) are placed in a depression upon the bare wall amongst bits of lime mixed with the hard parts of coleopterous insects. Incubation commences about the middle of May; and if the eggs are removed they speedily lay again, the second time mostly three eggs. In size, the egg is considerably smaller than that of the Common Kestrel; but it appears subject to pretty much the same varieties of colour, being on the whole perhaps somewhat lighter.

This species is very partial and gregarious in its breeding. Late in May 1859 we found four or five nests in one group of farm-buildings at Voukhori. Near the same place there is a ruined stone tower,—a remnant of the very few habitations of the Turkish period which have survived the sweeping devastation of the war of independence. It was burnt about thirty-five years ago, and is now a mere shell: bits of the blackened beams still stick out of its tottering walls, partially preserving the windowless apertures which were intended to admit air and light when the building possessed a roof. An ugly dangerous old edifice it is,—not time-worn and venerable, but looking like a half-picked skeleton reared up on end, whose collapse may occur at any moment. This is the abode of the largest colony of the Little Kestrel which we ever found breeding together. Though so near the village, they are not much disturbed: the only creatures that share with them possession of the ruin are one or two Little Owls, and a pair of Storks, which have built a large nest on the top of the tallest chimney now left standing. In the course of a couple of days, by carefully watching the holes, we managed to secure seven or eight nests of the Little Kestrel, using for that purpose two rickety ladders which the village afforded. One nest only was impracticable, being placed just beneath a tottering beam covered with loose stones. This was during the last week of May 1859.

Besides the difficulties arising from the position of the Stork's nest, the inhabitants of Voukhori (much to their credit be it said) were very unwilling that we should damage their beloved λελέκι. In consequence of this the nest was examined in the morning before daylight, and found to contain nothing. Storks should have eggs by the end of April; therefore it is to be presumed that this pair was young, and had not yet succeeded in producing a family. This was the only inhabited nest in the district; it might be seen from a great distance crowning the top of its isolated chimney, thus affording to the stranger a landmark by which he could direct his homeward course. In the days of the Turks these birds were common enough, as they now are in most Turkish villages.

Another of the household birds of Greece, but one more universally distributed than *F. cenchris* through every town and village of the country, is the little κουκουβαΐα (*Athene noctua*), which here presents the variety to which the term *meridionalis* has been applied. However, let it be called what you please, it is the veritable "Bird of Minerva" of the old Greeks, and as such is entitled to the reverence due to the familiar of the Goddess of Wisdom. It frequents olive-groves, old houses, ruins, ancient walls, and modern churches. To the latter it seems especially attached, though hardly with a view to getting any of the sacred oil, like those "fowls of the devil," the Scops Eared Owl and Barn Owl, in Catholic Spain (Ibis, vol. ii. p. 134). The cry of the Little Owl is one of the familiar sounds of the early part of the night, and is considered to be of good omen, so that even the Greeks like it. The name in their language, when pronounced rapidly, is not a bad imitation of the plaintive note which it utters. No other species of Owl is abundant in the district round Mesolonghi, though the southern variety of *Bubo maximus* breeds in the rocks of Aracynthus. The immense forests which clothe the ravines on the northern side of that mountain may contain several species, and possibly *Scops zorca,* in plenty.

Dismissing the Raptores, we will now consider a few of the more obvious of the Insessorial birds which frequent the low grounds on both sides of the Gulf of Patras. Besides the regular migrants, which, coming from Northern and Central Europe, hybernate in the plains of Ætolia and Acarnania, and the opposite shores of Northern Elis, there are large flocks of local migrants, coming from the high grounds or from the colder regions of Albania and Epirus, which spend the winter in these low and comparatively sheltered regions. First of all, in the immediate neighbourhood of Mesolonghi, immense quantities of Larks are to be seen. *Alauda calandra* is especially numerous. A sportsman of the true French school might here indulge in his favourite *chasse* to any extent. Numbers winter here, changing their quarters in the spring; though some remain to breed, their nests being discovered together with those of *A. brachydactyla,* whose eggs are very frequently brought in by the *gamins* of the place. *A. cristata* is sparingly but more universally distributed throughout the entire district, being often found during winter in small flocks with *A. arborea,* though not much on the Ætolian side. *A. arvensis,* too, is common enough in the winter, but disappears from the neighbourhood of Mesolonghi as spring approaches. Next in number, after the Larks, come the Finches. The Goldfinch, Linnet, and Greenfinch (*F. carduelis, cannabina,* and *chloris*) are to be found in great quantities: many other Finches are doubtless mixed with them; but these three species, either singly or together, form the bulk of the flocks which are always to be met with in the low grounds and at the base of the mountains. The Common Starling, too, collects in immense flocks just as at home, and breaks down the reeds as it formerly did in the fens of Huntingdonshire. Here no one takes the trouble to scare them, and yet they always seem a long time in making up their minds where they will ultimately take up their quarters for the night. One of the favoured places was in the reed-fen adjoining the lake of Pera Metokhi in Northern Elis. This fen, with the adjacent lake, is flanked on one side by part of a great oak-forest, and on the other by a forest of immense pines (*Pinus maritima*), which cover the plain to the base of the peninsular group of rocks terminating in Cape Papa. Often of an evening, coming home from woodcock-shooting, when the last rays of the sun were crimsoning the snows of Olonos and the sharp ridge of the more distant and loftier Kiona, have I noticed with admiration the evolutions of a flock of several thousands of these birds hovering over this reed-fen. No drill-sergeant could impart such unity of action to a given number of volunteers as was displayed by this body of Starlings. Seen from a distance in the uncertain light of evening, it seemed in shape like a comet moving across the pale blue sky. Suddenly another evolution is performed, and the apparent comet is resolved into its component units. Again the mass contracts, and a balloon seems to be floating over the reeds, which now lengthens out into a huge serpent gliding through the air. The hum of many wings is concentrated into a sound not unlike that of distant thunder, overpowering for awhile the cries of the wild-fowl and the as yet feeble croakings of the frogs.

Crossing over the gulf once more to our old neighbourhood at Ætolico, I may mention that a considerable flock of *Corvus collaris** passed the winter of 1860 in company with an equally large flock of Rooks at the foot of Mount Aracynthus. The Rook is only a hybernant in Greece, rarely if ever staying to breed there, but some of the Jackdaws do remain behind. Those at Ætolico during the month of February had the neck and shoulder of a very light grey; white it could scarcely be called. By far the greater part of them go away in the spring to breed—into Albania and the North most likely: yet I was assured by my servant, a trustworthy man, that the Jackdaws in Corfu and Albania have the grey ring much fainter than these have, and that in summer it is very slight indeed, probably nothing more than the faint grey ring observable in all the Jackdaws of Central Europe. All the evidence seems to point to the fact that these Ætolian Jackdaws of February are the same birds which breed during spring in Albania (see 'Ibis,' vol. ii. p. 135), and it seems clear that the Albanian Jackdaw of spring and summer is like the form prevalent in Central Europe. Whence then this great change? On the other hand, those birds which remained in Southern Ætolia to breed, retained during spring (of the summer I cannot speak) the whitish neck and shoulder, as also did all the Jackdaws that came under my notice in Asia Minor and Turkey during the spring of 1860. At Ephesus, amongst other places, there was a large colony breeding in April. During the latter part of the same month, in the very different region and under the very different climate of the Dobrudska, though on pretty nearly the same meridian, *C. collaris* was found breeding, to the entire exclusion of the Central-European form. These facts would point to its being an Eastern variety; and if one may hazard a conjecture on such slender evidence, we can suppose the majority of the Jackdaws hybernating in Western Greece to exhibit during a certain portion of the year those peculiarities, which, in some of their brethren that remain to breed, and in nearly all—if not all—the Jackdaws further eastward, have already passed into a permanent variety. It should be mentioned, however, that during the month of May 1859 there was noticed near Cape Papa in Elis a small colony, of which no one bird could be detected as differing from the common *C. monedula* of the rest of Europe.

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* See Proc. Zool. Zoc. 1846, p. 43, and Capt. H. M. Drummond's "List of Birds observed to winter in Macedonia," Ann. Nat. Hist. xviii. p. 11.—Ed.

Now that we are on the north side of the gulf, and once more at the foot of Aracynthus, it will be worth while to ascend the mountain a short way, either up the Grand Gorge, or, better still, up the Little Klissoura, to observe a few more of the very singular nests of *Sitta syriaca* and *Hirundo rufula*. Scrambling up the dry watercourse at the bottom of the Little Klissoura, we may notice in several places the nests of the former plastered to the face of the cliff. Most of these are old, and probably all but one or two inaccessible without a rope. Where the nest does not include a natural cavity of the rock, it is glued very tightly to the face of the latter, being fully exposed without any attempt at concealment, though very difficult to distinguish from the numerous ants' nests, to which in outward appearance it bears a strong resemblance. It has generally a southern aspect. The outside appears to be stuck over with the wings of insects worked up along with the mud composing it, which becomes very hard after exposure. *Hirundo rufula* is still more singular in its nidification, always fixing its nest under a cave or projecting slab of rock. In the Little Klissoura and throughout the precipices of Aracynthus there are plenty of these caves, in former times a convenient refuge for the Klephts, as they now are for the shepherds tending their flocks during the winter months. This eccentric Swallow, not satisfied with having a good dry cave all to himself, must needs construct a long passage to his nest, thus giving it the shape of a retort with the upper part cut away, and the remaining portion glued underneath a flat surface. The entrance is narrow, but the passage gradually widens, till it finally opens into a sort of chamber very warmly lined with feathers: here the little fellow and his mate are sure to be most snugly tucked in just after sundown, when they can't see to catch any more insects. Escape therefore is impossible when a ruthless ornithologist wishes to capture the pair for the sake of identifying their eggs. No more than one pair ever seem to occupy a cave, though the remains of previous nests could occasionally be traced on the roofs. The same pair appear to return year after year, and their nest, unless injured by shepherd boys during the winter, will merely require a little touching up to render it again inhabitable. The fact of the same birds returning was proved by these caves being untenanted, where the pair had been captured during the preceding year. Several nests with eggs were found towards the end of May and beginning of June 1859. Four seems about the complement: they are quite white, much resembling eggs of *H. urbica*, which could be well passed off for them in collections.

A curious circumstance in connexion with one of these nests occurred to Dr. Krüper and myself in a cave at the entrance to the Little Klissoura. Fastened to the roof of this cave (which was on the face of a low cliff, and not easy of access) we espied a very good nest of *Hirundo rufula*, upon which Dr. Krüper proceeded to operate with a penknife, whilst I placed my hand over the mouth of the passage. Presently something that felt cold, like a dog's nose, began rubbing against the palm. On withdrawing the hand a thick snake poked his head out of the aperture, looked around for awhile, and then popped in again. He was in very good quarters, and evidently intended to take a lease of the premises, which just suited him, as he could coil himself up in the bulb of the retort, with his head and neck stretched out along the passage in readiness for any emergency. We soon had him sprawling upon the floor of the cave, when it became apparent that he had swallowed a full-grown young Swallow, the other three being in all probability destined for a similar fate. The sensations of these wretched little victims, lying in such close contact with their horrible enemy, must have been somewhat akin to those of Ulysses and his companions in the cave of Polyphemus. In the destruction of the nest, two of them made good their escape; the fourth was captured and preserved by Krüper, together with the first, which, on being cut out of the body of the snake, was found to be very little injured as a specimen. The walls of the cave were smooth and nearly perpendicular, the roof at least seven feet above the floor, and no cracks visible; how then could this monster have wriggled himself into such a well-stocked larder?

Every European species of *Hirundo* and *Cypselus* (except perhaps *H. riparia*) may be found breeding in Mount Aracynthus. *Cypselus melba* (*πετροχελίδονα*) comes in April, and establishes considerable colonies both here and in Varassovo: its nests lie deep in the clefts of high precipices, and are very difficult of access. *Cypselus apus* is not so common. *Hirundo urbica* (*χελιδόνα*) has several large colonies in the Klissouras and in the Grand Gorge: its round nests thickly dotting the face of the cliff are very conspicuous; the birds may be seen flocking in and out of them like a swarm of bees. In the mountain, *Hirundo rustica* is not so common as the latter: there is a variety frequent about Mesolonghi, which at one time was raised to the dignity of a separate species. *Hirundo rupestris* (*ἀγρία χελίδονα*) is the only Swallow that winters in Greece. Numbers of them passed the month of February in the cliffs above the lagoon at Ætolico, where the nest of Bonelli's Eagle was found. During the summer they go higher up. One or two pairs were breeding towards the beginning of June in a deep cleft near the fort at the north entrance of the Great Klissoura, but their position was inaccessible.

The Game Birds of this district are few in species and decreasing in numbers. First of all comes the Greek Partridge (*Caccabis saxatilis*), which still maintains its ground in Aracynthus, though the natives are on the look-out for it all the year round. With this species incubation commences about the middle of April. It lays from ten to fourteen eggs, in colour much resembling those of the common Grey Partridge (*Perdix cinereus*); but in some a faint trace of freckles may be observed, thus connecting them with the profusely freckled eggs of the common Redleg (*Caccabis rubra*) and Barbary Partridge (*C. petrosa*). In all the mountains of Greece, *C. saxatilis* is more or less numerous, but, owing to the nature of the ground, does not afford good sport in its usual haunts. During the autumn, when the coveys descend to the islands, Meganisi for example, and in very hard weather, to the low grounds generally, a fair bag of them is sometimes made. The Pheasant, which used to be so numerous in the park-like woods that skirt the base of the mountains around the magnificent plain of Agrinion, must, I fear, be numbered with the things that have been. The Germans who came with king Otho are accused of being the first to commence the extermination of this bird; but now that the Greeks have left off shooting one another, they have taken to field sports instead. Nothing gratifies the pot-hunting propensities of an Ætolian shepherd more than stalking a hen pheasant on her nest—a sitting shot of course. Heaven be praised! they cannot shoot flying yet: when that accomplishment is learnt, adieu to the woodcocks. But it is obvious that as population and civilization increase in any district, all conspicuous birds that do not migrate to more secluded breeding-quarters must cease to exist. Anything like abstaining from shooting during the breeding season is almost too much to expect from a people who have recently made so great a sacrifice as to forego their hereditary privilege of shooting each other. The Bustard (*Otis tarda*) and Little Bustard (*Otis tetrax*), which are not uncommon in Eastern Greece, occur but rarely in the neighbourhood of Mesolonghi. The Quail (*ὀρτίκι*) is tolerably plentiful at times, and many winter here. In December there is often very fair Quail-shooting; but the great spring migration, which covers some of the Ionian Islands with Quail towards the end of April, is but slightly felt on this part of the mainland.

Before quitting the region included between the Acheloüs and the Phidaris, it only remains to take a 'monoxylon' and have a sail upon the broad lagoon of Mesolonghi, not forgetting to examine its muddy shores and numerous islets, which are the breeding-grounds of some of the many varieties of birds which we see resting upon or hovering over its surface. As there is a great change between summer and winter in its occupants, a separate expedition for each season will display great variety in the ornithological features of the scene. We will suppose the first to embrace the greater part of the latter half of May, when the majority of the birds that intend to breed here have already prepared their nests, whilst those whose breeding-grounds are further north are resting on the way from their southern quarters. Beginning with the Waders, we are sure to notice abundance of *Ægialites cantianus*, which breeds plentifully on the mud flats and islets. Its congener, *Æ. minor*, is not uncommon amongst the immense gravel-beds of the Acheloüs and Phidaris, on one of which I once picked up part of an egg-shell, evidently of this species. *Glareola pratincola* is distributed everywhere, and breeds in company with the Terns. A few pairs of the Stilt (*Himantopus rufipes*) may also be seen flitting about: their breeding-place is close to the edge of the rough fen near Ætolico. On the 15th, a Plover, flying rapidly towards the east, was brought down by a quick shot, and turned out to be *Squatarola helvetica*, still in the winter dress. November and May are the months when this bird may be looked for in the marshes of Greece. Of *Totanus calidris* a very few pairs remain to breed: one nest only was brought in. During winter it is so common, that if you land on an island to get a shot at a snipe or a duck, one of these birds is sure to rise up and go shrieking across the water, to the great disgust of the gunner, as it puts the ducks on the alert. Hence its name of *μάρτυρος*, or the "Tell-tale."

If I remember rightly, the Scandinavian name of "*Tolk*," applied to this bird, attests a similar appreciation of its evil qualities. Some individuals of *Totanus ochropus* remain so late, that their breeding-quarters may be nearer than is generally supposed. We can believe almost anything of a bird that so far departs from the habits of its congeners, as occasionally to lay its eggs in old nests of tree-building birds *. *Tringoides hypoleucus* was not observed on the lagoon, but there is little doubt of its breeding amongst the pebble beds of the large rivers. On the 21st I was very much surprised to notice, at the mouth of the town-ditch of Mesolonghi, a large flock of *Tringa subarquata*. The following day they were again seen at the edge of the lagoon to the eastward of the town, where there is a good deal of rubbish occasionally thrown out, amongst which they seemed to be eagerly picking. About half of the flock were beginning to show the red breast and body, and some were in almost full nuptial plumage. What a long journey had these little fellows before them, for whom, in search of a breeding-ground, the extreme Cape of Siberia is not far enough north! [I think it is Middendorf who says this.] Small flocks of *Tringa temminckii* may be seen about the same time, or even later. *Numenius tenuirostris* would seem to breed somewhere in the neighbourhood, though no one, as far as I know, has ever had the luck to find its nests.

Ibis falcinellus occurs in flocks of moderate size. During the spring I have seen several together so late as the 15th, apparently on passage. It is not very probable that any breed in this district, though a few most likely remain behind in Epirus and Albania. The main body are merely *en route* for the marshes of the Danube and its affluents, where great quantities of them annually rear their young. The same remarks will apply to *Ardeæ purpurea, garzetta,* and *comata,* all of which species I have noticed in the marshes of Northern Elis, just across the gulf, so late as the middle of May. If any of them do breed here during the month of June, they are so well concealed in the reed thickets as to escape observation. *Ardea cinerea* would seem to remain here all the year round. *Ardea minuta* is frequent in spring, and most likely breeds in the neighbourhood.

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* Dr. Krüper has found eggs of this species so placed in Pomerania.

Though parts of the lagoon are covered with Ducks during winter, it is almost deserted by them in the month of May. *Anas boschas,* however, breeds on the islands; we found several of their nests, some with eggs, others hatched off or taken. No duck in Europe (let the high plateaux of North Africa be included) has such an extensive breeding-range as the common Wild Duck. The oologist in search of identified ducks' eggs, those most valuable desiderata of authentic cabinets, is sure to come across more of these than of any other species. Even in Lapland, the chosen breeding-ground of Wigeon, Teal, Golden Eye, Crested Duck, and a host of others, a stray nest of *A. boschas* is sometimes found, whilst in Greece it is the only duck that breeds at all plentifully. *Anas querquedula* breeds, according to report, in the marsh at Thermopylæ, and perhaps here also; nor is it improbable that a few pairs of *Fuligula nyroca* remain behind for the same purpose.

The most numerous of all the birds during the latter half of May on the lagoon of Mesolonghi are the Terns, and notably *Sternæ hirundo, minuta,* and *anglica.* If unmolested, their numbers would be enormous, as there are probably few places in the Mediterranean more adapted by nature for these birds, if innumerable flat islets and sandy spots, washed by an immense extent of very shallow salt water abounding in fish, can be any inducement to their undertaking the labours of incubation. But now that the towns of Mesolonghi and Ætolico are beginning to stir, and the fisheries to be more looked after, all the birds will suffer from the increase of activity. The eggs of *Sterna anglica* especially are much eaten by the natives. It was from this circumstance that I came to discover their principal colony, as the following extract from my note-book will show:—

"On the 23rd I started in a monoxylon with Vitalis and a native to search the salt lagoon and the islets south-east of the town, my chief object being to discover the quarters of *Sterna anglica,* which was to be seen flying about in every direction. This bird had caused me many a fruitless ride across the high plains of the Atlas during the summer of 1857; and it now seemed likely that I was to have another wild-goose chase across the lagoon and mud-flats of Mesolonghi under the equally powerful sun of Greece. Already several days had elapsed since we first noticed them, and still we were unable to gain any satisfactory tidings of their mysterious retreat. My associates became very mutinous in consequence of our prolonged ill-success; so I directed the boat to be landed at a fisherman's hut outside the main group of islets, where some fish was roasted to appease their hunger and ill-temper. Whilst this was being prepared, the usual question of course was put, and elicited the usual reply in the negative. 'Where do these broken shells come from, then?' 'Oh! they come from a long way off; and the birds won't lay any more.' 'Wouldn't 20 *lefta* per egg induce the birds to alter their determination?' 'They couldn't lay upon trust; part of the money must be paid down.' So the fisherman's boy agreed to try; and our monoxylon set off towards the outer spit, which was searched without success. On returning to the islet, I was much surprised at seeing a straw hat filled with eggs of *S. anglica* awaiting our inspection. Late as it was, I made the boy take me to the place, where I had the satisfaction of seeing the bird itself in great numbers, and succeeded myself in finding four nests, two of which, with their full complement of eggs, were taken then and there. The boy was directed to find all the nests he could, and leave them for me to inspect on the following day." The greater number of the nests were on two of the innermost islets of this group. Generally they are placed on the raised outer edge, which in case of a flood would remain longest high and dry. The eggs are deposited upon the sand or soil, in a depression slightly lined with a few bits of dead grass, and are not easy to see, as the colours blend with surrounding objects. The birds appear to commence incubation simultaneously, or nearly so, as most of the nests contained eggs pretty fresh. They did not evince the anxiety which many Terns do about their eggs, but simply contented themselves with flying in a body, at a great height, over the islands. I strongly suspect that in these hot countries the Terns do not care to sit upon their eggs throughout the day; and this may be the reason why one often sees flocks of *Sterna anglica* feeding miles away from head-quarters.

Mingling with the grand army of *Sterna anglica* are a few individuals of *Sterna hirundo*, which breeds sporadically over the entire lagoon: the chief colonies of *Sterna minuta* are in another direction. These three Terns are all that breed here, as far as I can tell. A few individuals of *Sterna leucoptera* and some flocks of *Sterna nigra* were observed so late as the middle of May, but they all seemed bound for the north.

Before taking leave of the lagoon in its summer aspect, there is one more bird well worthy of our attention, though it may seem somewhat out of place at the end of the list. Let the egg-seeker land on any islet, mud-bank, or sandy spit not destitute of vegetation, and who so ready to herald his approach, watch his proceedings, and chirp defiance at him from the top of a hillock, as the vivacious, brilliant *Motacilla melanocephala*? His mate has long ago quitted her nest, and presently makes her appearance in quite another direction, with that demure look which hen birds are apt to assume when they wish to look as if they didn't come from anywhere in particular. This bird is one of the especial features of Mesolonghi, where it is exceedingly numerous, and the only Wagtail seen during the summer-time. Besides the great contrast between the black head and the grey one, and the superior brilliancy of the yellow of this bird, together with the minor distinctions which may be observed on comparing skins of it with those of *M. flava*, there does not appear to be any difference in their respective habits, though much in their distribution. *M. flava* is an early spring migrant here, even wintering, according to Von der Mühle, in the extreme south of the Morea: the flight is generally over before *M. melanocephala* makes its appearance, which latter comes about the same time as *Merops apiaster*. The same authority also says that "one never meets with *M. flava* and *M. melanocephala* together;" that "in many districts, such as Livadia, Volo, and Lamia, only *M. flava* is met with, whilst in the Morea it is only *M. melanocephala*." This, I presume, is meant to be during the breeding-season. If his observations are correct as to the east coast of Continental Greece, it would appear that *M. melanocephala* does not go very far north on the side of the Ægæan, whilst on the west side of the Hellenic peninsula Mr. Powys (Ibis, vol. ii. p. 229) noticed the species, though in small numbers, near Butrinto in Epirus, which is pretty nearly as far north as it seems to have been observed.

Visiting the same lagoon in the month of February, a great change will be perceived in its ornithological aspect, not less than in the surrounding landscape. Instead of the gorgeous *M. melanocephala* in pairs, we have small flocks of *M. boarula* and *M. alba*. Not a single individual of *Sterna anglica* (as far as my observation goes) is to be seen, though *S. hirundo* maintains its ground. Instead of *S. anglica*, a few *S. cantiaca* and many *S. caspia* are flying over its waters, which are now well stocked with Ducks, though not so fully as a month ago. "Πλῆθος, πλῆθος," said a Mesolonghiote, in answer to our inquiries touching the Ducks when first we came; but many have gone over since then to the Patras market. Of the true Ducks, *Anates penelope, boschas,* and *crecca* are the most numerous; *A. querquedula* not scarce; *A. acuta* very rare; *A. strepera* not seen at all. *Rhynchaspis clypeata* tolerably numerous. The genus *Oidemia* not represented. *Fuligula cristata* and *F. ferina* extremely numerous; *F. nyroca* and *Clangula glaucion* less so. The last four species keep to the open water more than the true Ducks, which latter lie up amongst the reeds and sedge near the springs. *F. marila* and *F. rufina* not observed. *Mergus albellus* is said to be very plentiful at times; but not many were seen during the winter of 1860.

As this short account of the Birds of Western Greece is not intended to contain an exhaustive list of the species that occur there, but simply to point out a few of its most obvious ornithological features, there is no need to go through the shore birds and other Waders which frequent its lakes and swamps during the winter season. We may be sure that, in a country with so large an extent of sea-coast, and where draining is at present so little practised, the genera *Charadrius, Totanus, Tringa, Scolopax,* and *Numenius* are well represented. There is only one other bird (a most conspicuous feature in the lagoon of Mesolonghi) to which I would direct attention, and the more so as it is likely soon to disappear from the district, because it is too good a fisherman to be allowed a cast without paying any rent.

Time was, and not so long ago, when *Pelecanus crispus* lived in hundreds all the year round, from the rocky promontory of Kourtzolari, hard by the mouth of the Acheloüs, on the western extremity of the lagoon, to the islands of Ætolico, up its northern arms, and, on the east, to the great mud-flats which mark the limits of the present delta of the Phidaris. Now-a-days a solitary individual may be seen fishing here and there throughout the lagoon, but the small remnant of this once mighty host have made their last stand upon the islands which divide the Gulf of Procopanisto from the Gulf of Ætolico. Here, towards the end of February last, the community of Pelicans constructed a group of seven nests,—a sad falling-off from the year 1858, when thirty-five nests, the remains of which had not then disappeared, were grouped in contiguous proximity upon a neighbouring islet. It needs not the nose of a pointer to discover the locality, even if the large white birds themselves were not a sufficient guide. As we approached the spot in a boat the Pelicans left their nests, and taking to the water, sailed away like a fleet of stately ships, leaving their newly-built establishment in possession of the invader. The boat grounded in 2 or 3 feet of mud, and when the party had floundered through this, the seven nests were discovered to be empty. A fisherman had plundered them that morning, taking from each nest one egg, all of which we of course recovered. The nests were constructed in a great measure of the old reed palings used by the natives for enclosing the fish, though with these were mixed such pieces of the vegetation of the islet as were suitable for the purpose. The seven nests were contiguous, and disposed in the shape of an irregular cross,—the navel of the cross, which was the tallest nest, being about 30 inches high, the two next in line on each side being about 2 feet high, the two nests forming each arm of the cross a few inches lower, and the two extremes at either end being about 14 inches from the ground. These latter, it is presumed, were intended for the junior partners of the firm, in the same way that the great bear of nursery tales has a big seat, his wife a middling seat, and the little bear a small seat. The eggs are chalky, like those of the *Pelecanidæ* generally, very rough in texture, and some of them much streaked with blood.

XLIX.—*Contributions to the Ornithology of Guatemala.* By OSBERT SALVIN and PHILIP LUTLEY SCLATER. (Part III.)

(Plate XIII.)

[Concluded from page 278.]

ON leaving Coban, in November 1859, I engaged Cipriano Prado, a resident of that town, to proceed to the coast-region of the north to collect birds for me. This man was absent nearly four weeks, and returned with a series of about 400 skins. At the same time his brother, Juan Prado, also got together some 200 more from the Indians of Coban and its neighbourhood. During the months of January and February 1860 I was myself collecting at Dueñas, and made a short excursion to Escuintla. Thence I returned in March, *viâ* Dueñas, to Vera Paz, and obtained a few birds by the way on the Rio Motagua.

At San Gerónimo my friend Mr. Owen had during these months made a small collection, which contained several species I had not previously noticed in Guatemala. All these, with a few that I collected in the mountains of Vera Paz in the month of March last, form the principal part of my last collections, the rest being made up by two small lots, one from Tactic, and the other from Cajabon.

The whole number of skins thus assembled amounts to nearly 1000, belonging to about 220 species, of which 46 are new to the fauna of Guatemala.—O. S.

To these 46 species 6 more may be added, as now satisfactorily ascertained to be found within our limits, making in all 52 additional species. After erasing the names of a few from the first list, whose occurrence in Guatemala has not been confirmed, the whole Avifauna of that country includes 503 species—a larger number probably than would be found in any country of equal area yet explored.

We now give the names of the additional species, as we have determined them, the remarks on the localities and habits being added by Salvin.

1. TURDUS MIGRATORIUS, Linn. N. A.

Coban. This is probably the usual southern limit of this bird, one specimen only having been obtained, though it has been noticed as a straggler in some of the southern Antilles.

2. THRYOTHORUS FELIX, Sclater ?

Escuintla. This Wren is most like *T. felix* of Oaxaca, described P. Z. S. 1859, p. 371; but a single specimen only being in the collection, makes its determination not quite satisfactory.

3. CYPHORHINUS GRISEICOLLIS (Lafr.): *Scytalopus griseicollis,* Lafr. Rev. Zool. 1840, p. 103; *Thryothorus guttatus,* Hartl. Syst. Verz. Mus. Brem. p. 28 (1844).

Volcan de Agua, January 1860. This bird is the one mentioned at p. 272. It appears distinct from the *C. prostheleucus,* of which Cipriano Prado obtained many specimens near Choctum, in the tierra caliente, to the north of Coban. The true *C. prostheleucus* seems to be found in the hot country only; while this bird is an inhabitant of a much more temperate region, and seems identical with the species of New Granada.

4. POLIOPTILA ALBILORIS, Sclat. et Salv. P.Z.S. 1860, p. 298.

I shot a single specimen of this bird near a place called Choacus, in a valley leading into that of the Rio Motagua.

5. PARULA BRASILIANA (Licht.).

Cipriano Prado's collection contained a single specimen of a *Parula* apparently of this South American species, which has not hitherto been noticed so far north.

6. HELMINTHOPHAGA CHRYSOPTERA (Linn.): Baird, Rep. p. 255. N. A.

A single specimen from Choctum.

7. GRANATELLUS SALLÆI, Sclat. P. Z. S. 1856, p. 92.

A single specimen in the collection from Cajabon.

8. HYLOPHILUS OCHRACEICEPS, Sclater, P.Z.S. 1859, p. 375.

Several specimens in the collection from Choctum.

9. HYLOPHILUS CINEREICEPS, Sclat. et Salv. P.Z.S. 1860, p. 299.

Two specimens from the same locality as the last.

10. MYIADESTES UNICOLOR, Sclater, P. Z. S. 1856, p. 299.

A common species about Coban, and throughout the greater part of the mountainous parts of Vera Paz. Though of the same character, its song differs considerably from that of *M. obscurus*, and is perhaps the more melodious of the two.

11. PASSERCULUS ALAUDINUS, Bp.: Baird, Rep. p. 446. N.A.
Obtained among low shrubs near the lake of Dueñas.

12. HÆMOPHILA RUFICAUDA, Bp. : *Chondestes ruficauda*, Bp. Compt. Rend. xxxvii. p. 918 (1853).

Valley of the Rio Motagua, inhabiting the sterile parts where Cacti and Mimosæ chiefly grow.

13. ORYZOBORUS FUNEREUS, Sclater, P. Z. S. 1859, p. 378.
One specimen from Choctum.

14. COCCOTHRAUSTES MACULIPENNIS, Sclater, P. Z. S. 1860, p. 251, pl. 163.

One specimen from Alotenango. This should have been included in our last list. There were two birds where I shot this; the other I was unable to secure.

15. ICTERUS MACULIALATUS, Cassin, Journ. Acad. Philad. i. p. 137, pl. 16. fig. 1.

Volcan de Fuego. Two examples, ♂ ♀. One of these rare *Icteri* was brought to me by José Ordoñez, the hunter of *Oreophases*, the day before I left Dueñas. The other I shot myself in the Volcano.—O. S. Besides these, I have only seen the examples in the collection at Philadelphia, which are marked 'Coban.'—P. L. S.

16. QUISCALUS SUMICHRASTI, De Saussure, Rev. Zool. 1859, p. 119.

This bird differs a good deal from a true *Quiscalus* both in its cry and habits. I only met with it in Vera Paz, never in other parts of the republic; nor is it found about San Gerónimo,—first occurring on the high part of the road to Tactic.

17. ANABAZENOPS VARIEGATICEPS, Sclater, P. Z. S. 1856, p. 289.

In Cipriano Prado's collection from Choctum, as also the following four species.

18. DENDRORNIS FLAVIGASTRA (Sw.).
Choctum, January 1860.

19. Thamnistes anabatinus, Sclat. et Salv. P. Z. S. 1860, p. 299.

Choctum, January 1860.

20. Dysithamnus semicinereus, Sclater, P. Z. S. 1855, p. 90, pl. 97.

Choctum, January 1860. These specimens seem undistinguishable from the New-Granadian bird.

21. Ramphocænus rufiventris, Bp.

Choctum, January 1860. Cipriano also shot a specimen of this bird while with me at Lanquin.

All these appear to be birds exclusively frequenting a hot country.

22. Tyrannus crassirostris, Swains. Quart. Journ. Sc. xx. p. 273.

Escuintla, January 1860.

23. Myiobius sulphureipygius, Sclater, Ibis, 1859, p. 442.

Choctum, in Juan and Cipriano Prado's collections. A bird of the hot region.

24. Pyrocephalus mexicanus, Sclater, P. Z. S. 1859, p. 45.

Don Vicente Constancia has one specimen of this bird. I never met with it myself; but it is included in Moore's list of the Birds of Honduras collected by Leyland.

25. Cyclorhynchus brevirostris, Cab.

In the collections from the hot district of Choctum; also the following.

26. Cyclorhynchus cinereiceps, Sclater, Ibis, 1859, p. 443.

Of this bird I also shot one example at Escuintla.

27. Platyrhynchus cancrominus, Sclat. et Salv. P. Z. S. 1860, p. 299.

From Choctum.

28. Todirostrum schistaceiceps, Sclater, Ibis, 1859, p. 444.

Choctum.

29. Leptopogon amaurocephalus, Cab.

Choctum. A Tyrannine of this genus agreeing with Mexican examples referred to in P. Z. S. 1859, p. 384, but not yet certainly identified with the S. American *L. amaurocephalus.*

30. CAMPTOSTOMA IMBERBE, Sclater, Ibis, 1859, pl. xiv. fig. 1.

I shot a single specimen, the second only which has been procured of this little bird, at Escuintla. I saw several others in the neighbourhood, but was unable to secure them.

31. TYRANNULUS SEMIFLAVUS, Sclat. et Salv. P. Z. S. 1860, p. 300.

One specimen only, shot by Cipriano Prado at Choctum.

32. HETEROPELMA VERÆ-PACIS, Sclat. et Salv. P. Z. S. 1860, p. 300.

Also shot by Cipriano Prado at Choctum.

33. LIPAUGUS HOLERYTHRUS, Sclat. et Salv. P. Z. S. 1860, p. 300.

Seems to be found in the same localities as *L. unirufus,* viz. in the tierra caliente of Vera Paz. I never obtained *L. rufescens,* a specimen of which, said to be from Coban, is in the British Museum.

34. TITYRA ALBITORQUES (Du Bus).

One example, a male, from Choctum.

35. HELIOTHRIX BARROTI, Gould, Mon. Troch. pt. vi.

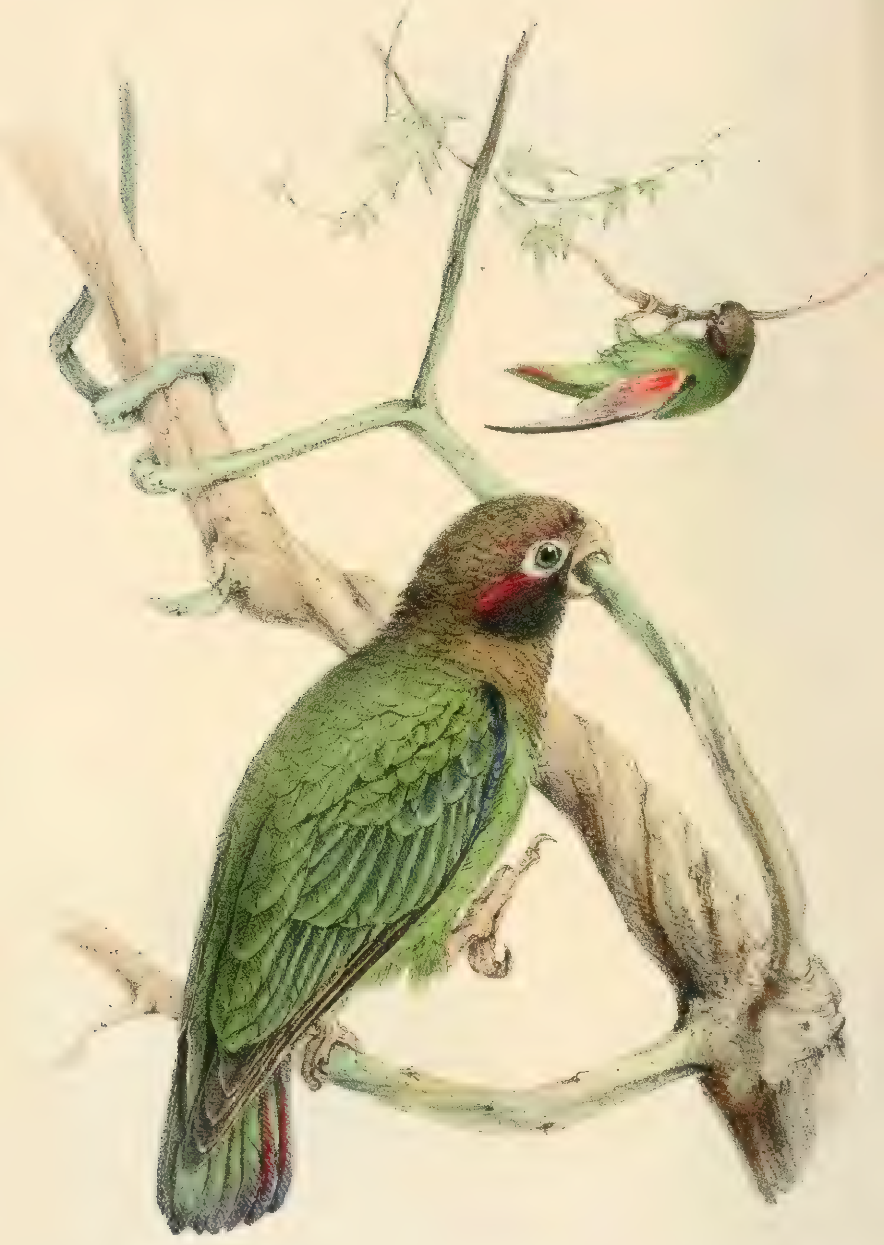
The 'Columbian Fairy,' as Mr. Gould calls this species, seems, from all the accounts I could hear, to be far from scarce in the tierra caliente of the upper parts of the Rio de la Passion, occurring rarely at Choctum, but more abundantly at Chisec, a place further to the northward, in the direction of Peten. It is found also on the Rio Polochic, where I saw one specimen as I was riding from Teleman to Panzos to embark in a canoe to proceed to Yzabal.

36. HYLOMANES MOMOTULA, Licht.

Choctum.

37. CHLORONERPES OLEAGINEUS, Reichb.

Choctum.



38. Conurus petzii (Hahn).

A common species about some hot springs near the Rio Motagua.

39. Pionus hæmatotis, Sclat. et Salv. P. Z. S. 1860, p. 300. (Plate XIII.)

This beautiful Parrot is known to the Indians of Vera Paz as the '*Khel.*' It is said to be far from uncommon in the tierra caliente; and during the time that the maize is ripe at Coban, it is one of the species that commits the greatest depredations on the crops. In the month of March (1860), when I was in the mountains in search of Quesals (*Pharomacrus paradiseus*), a small flock used to frequent the neighbourhood of one of our camps. Owing to the great height of the trees on which they usually sat, I was only able to secure one specimen. Cipriano Prado brought two others from Choctum.

40. Chrysotis autumnalis (Linn.).

I am not aware of having met with this species in a wild state, but it is frequently seen in cages in Guatemala. It is said to be common in the tierra caliente of Vera Paz. Juan Prado brought two from those districts, one of which died and was preserved.

41. Buteo fuliginosus, Sclater, Trans. Zool. Soc. vol. iv. p. 267, pl. 62.

Juan Prado procured me one specimen of this Buzzard. It was brought to him by an Indian.

42. Buteo erythronotus, King: Strickl. Orn. Syn. p. 34.

Don Vicente Constancia has an adult example of this bird, shot near Antigua Guatemala.

43. Accipiter cooperi, Bp.: Baird, Rep. p. 16.

One specimen, in immature dress, in Juan Prado's collection.

44. Pholeoptynx hypogæa (Bp.).

One specimen, obtained at San Gerónimo by Mr. Owen. I saw another, decayed, lying on the thatch of a rancho at Lanquin.

45. Geotrygon albifacies, Sclat. P. Z. S. 1858, p. 98.

46. Geotrygon montanus (Linn.): Bp. Consp. ii. p. 72.

Both these Pigeons are found in the forests of Vera Paz.

47. Columba —— ? ——

Choctum. A single specimen of a Pigeon, probably referable to *Columba vinacea*, Temm.

48. Leptoptila rufaxilla.

Both these Pigeons are also from the hot districts.

49. Platalea ajaja, Linn. N. A.

Soon after I left Guatemala in 1858, a Rosy Spoonbill was killed by an Indian near the lake of Dueñas. Don Vicente Constancia now has this specimen stuffed.

50. Eudocimus albus (Linn.): Bp. Consp. p. 156. N. A.

When coasting up the Belize territory in April last (1860), I saw two specimens of the White Ibis near Golden Stream Keys.

51. Eudocimus ruber (Linn.): Bp. Consp. ii. p. 157. N. A.

Mr. George Baily informed me that this bird is very common at certain seasons about the shores of the lake of Yzabal.

52. Chauna derbiana, G. R. Gray.

This fine Screamer is probably peculiar to the forests of Central America. The type-specimen (which, as we have been kindly informed by Mr. T. S. Moore, the Curator of the Derby Museum at Liverpool, is now stuffed in that collection) was received from Mr. Bates, the collector, by the late Lord Derby in 1843. It was captured alive at Peten, and kept living for four months by cramming it with food. A second and finer example in the same collection is labelled as having been purchased from Mr. Leadbeater in 1843. We are not aware of the existence of this bird in any other European collection.

L.—*Letter from* Dr. G. Bennett *respecting a new Cassowary.*

(Plate XIV.)

[The following letter from Dr. George Bennett relates to the new Cassowary lately received by the Zoological Society of Amsterdam, the existence of which has been alluded to in a recent number of the 'Annals of Natural History*.' The accompanying illustration (Plate XIV.) is copied from the drawing of the head of this interesting bird, kindly communicated to us by Dr. Bennett. Mr. Blyth has also been good enough to forward

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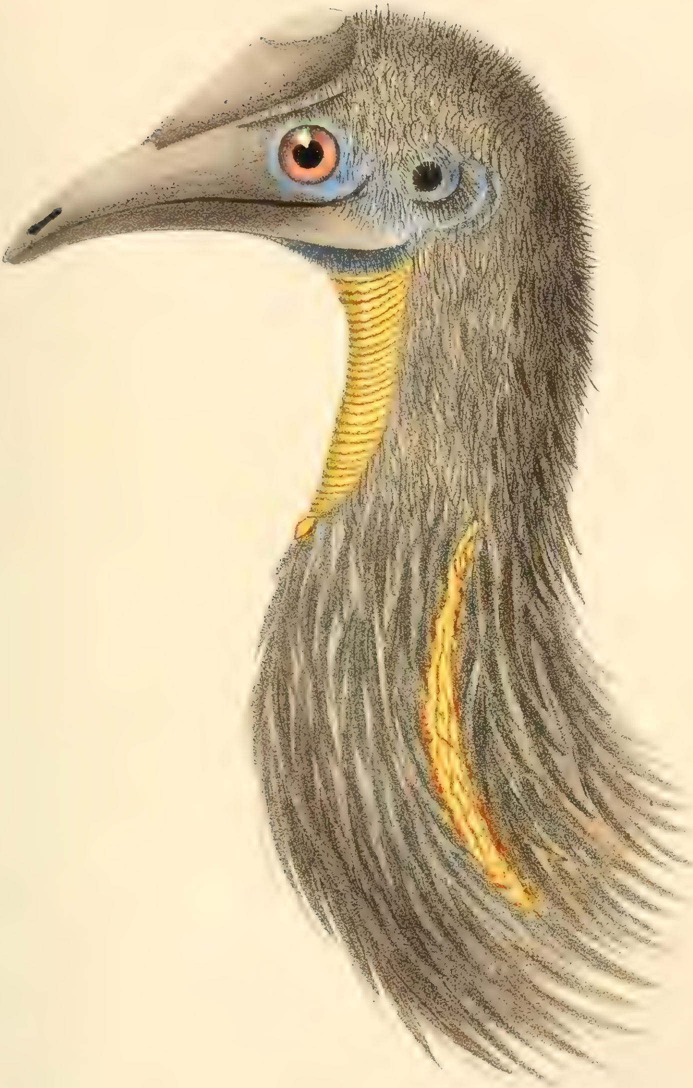
* Ser. iii. vol. vi. p. 113, note (Aug. 1860).



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to us a drawing, by a native artist, of the type-specimen of his *Casuarius uno-appendiculatus,* which was lately living in the Babû Rajendra Mullick's menagerie at Calcutta. There can be no doubt, upon comparison of these two drawings, of the identity of the two birds. The Calcutta bird is evidently the older, the casque being better developed, and the yellow colour extending over the back of the neck, whereas in the Amsterdam specimen this part appears to be covered with short feathers.—Ed.]

"Athenæum Club, Aug. 17th, 1860.

"My dear Sir,—During a visit to the Zoological Gardens of Amsterdam, on the 10th of this month, I observed a living specimen of a Cassowary, differing in many characters from any of the hitherto known species. It appears to be about half-grown, being of about the same size as the last two Mooruks when I sent them to the Zoological Gardens in the Regent's Park; and the casque is not yet developed. The cheeks are of a bluish-green colour; the throat circled, and of a bright ochreous yellow, terminating in a single wattle. On each side of the neck there is a bare space, also of a bright ochreous colour with a slight crimson tinge. In general appearance the bird otherwise resembles the Common Cassowary of about the same age. These characters accord so nearly with those of the bird mentioned by Mr. Blyth as living in the menagerie of the Babû Rajendra Mullick at Calcutta, as to induce me to regard it as probably of the same species.

"On the label of the bird at Amsterdam is written '*Casuarius uni-appendiculatus,* Blyth : Geelbif *Casuarius.* Ship "Agatha and Maria," from Molucca Islands,' without designating any island in particular; so that its true habitat is unknown. Mr. G. F. Westerman, the able Director of the Gardens at Amsterdam, observing the interest I took in this new bird, kindly had the enclosed drawing (see Plate XIV.) made for me, which conveys an excellent representation of the bird. When the published description of Mr. Blyth, together with a drawing, arrives in England, it will be decided whether his bird is identical with the example alive at Amsterdam. There appears to be every probability that such is likely to be the case.

"I remain, yours &c.,

"George Bennett."

LI.—*Remarks on the* Anas (Anser) erythropus *of Linnæus* *.

By ALFRED NEWTON, M.A., F.Z.S.

THE determination of the species established by Linnæus has always been held by naturalists a matter of so great importance, that I have no scruple in occupying a portion of your time this evening with a few remarks respecting the bird which, in the 12th edition of his 'Systema Naturæ,' is designated by the name of "*Anas erythropus*;" especially also as one of his editors (the late learned Professor Retzius), though noticing the "mira circa hanc avem confusio," has, in my opinion, failed to give a satisfactory solution of the difficulty. It will be, I think, universally admitted that the names employed by Linnæus, when, as in the present instance, they are drawn from any physical character, are remarkably apposite. This consideration of itself should have served as a warning to ornithologists against their imagining, as many have done, that he could possibly mean to apply the name "*erythropus*" to a species like the Bernicle Goose, with which he was sufficiently familiar, and to which it was in no degree suitable.

It will, perhaps, be convenient to examine first on what foundation "*Anas erythropus*" was established.

In the 12th edition of the 'Systema Naturæ' (Holmiæ, 1766) we find (vol. i. part 1. pp. 197–8) the species as the eleventh in order of the genus *Anas*, and the account given is :—

"*A.* cinerea, fronte alba. Faun. Svec. 116." [I omit all the synonyms borrowed from other authors.] "Rostrum *rubrum.* Pedes *rubri.*"

Now these latter characters clearly can have no reference to the Bernicle Goose, even if that species were not elsewhere included as *Anas bernicla*, var. *β*.

Turning then to the edition of the 'Fauna Suecica' cited (Stockholmiæ, 1761), we have (p. 41) as follows :—

"116. ANAS *erythropus* cinerea; fronte alba. Fn. 92 . . . . . . Anser cinereus ferus, torque inter oculos et rostrum albo, erythropus. W. Botniensibus Fjæll-gås. Habitat in Helsingia, Laponiæ alpibus."

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* This paper was read before the Zoological Society at their meeting on the 26th June last, and is extracted from the 'Proceedings.' It has been

To this succeeds a description of the male, which I admit is open to objection; but the matter, in my opinion, is rendered conclusive by the description of the female, which, in the edition of the 'Fauna Suecica' here referred to, and published fifteen years previously (Lugd. Bat. 1746), is alone given. It is this:—

"Rostrum sordide carneum, frons alba. Caput, collum, dorsum, cauda cinerea; pectus et abdomen candida: maculæ in sterno nigrescentes. Pedes sanguinei."

It is therefore plain that by *Anas erythropus* Linnæus did not intend to designate the Bernicle Goose, but a bird known in his time to the Swedes of Westro-Bothnia by the name of Fjællgås—*i. e.* "Fell" or "Mountain Goose." It accordingly remains to be seen what that species is.

It appears by the note-books of the late Mr. John Wolley, which are now in my possession, that in all his researches he was able to find only two species of Wild Goose inhabiting the extensive district in Lapland which he so carefully explored, and of which part was comprehended in the ancient province of Westro-Bothnia. These species are known to the Finns, who form the great bulk of the population, respectively as the "Iso-hanhi" and "Killio-hanhi,"—the former signifying "Great Goose," the latter "*Mountain* Goose." The Iso-hanhi he had several opportunities of identifying as the well-known Bean Goose (*Anser segetum*); the other he found, somewhat to his surprise, to be, not, as he had been told by Swedish ornithologists, the Bernicle Goose, but a bird of about that size, and at the same time closely resembling, in plumage and other physical characters, the White-fronted Goose (*Anser albifrons*). Not to extend the present remarks, I may state briefly that he was not able to discover that the Bernicle Goose was known to any of the inhabitants of the interior of the country,—a statement which is singularly corroborated by Mr. Dann's note communicated to Mr. Yarrell (B. B. iii. p. 73) in reference to the last-named species:—"A skin of this Goose was shown me by some Laps near Gillivara, who were ignorant of the bird, never having seen it before. It was shot at Killingsu-

thought advisable to reprint it in full, as containing an important rectification in the nomenclature of European species.—Ed.

vanda." Accordingly, in the Catalogue of his Eggs sold by Mr. Stevens in 1856, he stated, under the head of "*Anas albifrons,*" that "this interesting bird is the proper Fjell-gås of the Swedes, which name has, however, been applied to the Bernicle in their works on Natural History. The Lapland specimens seem to be of the small-sized race, which has been named *Anser minutus* by Naumann." I must here take exception to part of Mr. Wolley's statement, some Swedish writers being quite aware that the "Fjæll-gås" was not *Anser leucopsis,* as, for instance, Professor Zetterstedt, in the account of his travels in Lapland* (vol. ii. p. 161).

In the Catalogue of his Eggs sold in the following year (1857), Mr. Wolley further identified "the only White-fronted Geese which breed in Lapland" with the *Anser finmarchicus* of Bishop Gunner, described in one of the notes (pp. 264–5) of Professor Leem's great work† "as distinct from the larger White-fronted Goose."

I can only say that I entirely coincide with the views thus expressed by Mr. Wolley, while I also identify the "Killiohanhi‡" or "Fjæll-gås" with the *Anas erythropus* of Linnæus; and I here subjoin a concise summary of the principal synonyms of this bird.

Anser erythropus (Linn.).

Anas (*Anser*) *erythropus,* Linn. Syst. Nat. ed. 12 (1766), vol. i. part 1. p. 197 (non auct.).

Anser finmarchicus, Gunner, in Leemii de Lappon. Comm. notis (1767), p. 264.

Anser temminckii, Boié, Isis, 1822, p. 882.

Anser minutus, Naum. Naturgesch. der Vög. Deutschl. (1842) vol. xi. p. 365, tab. 290.

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* 'Resa genom Sweriges och Norriges Lappmarker, af Joh. Wilh. Zetterstedt.' Two vols. 8vo. Lund. 1822.

† 'Canuti Leemii de Lapponibus Finmarchiæ Commentatio, una cum J. E. Gunneri notis, &c. &c.' Kjöbenhavn, 1767.

‡ In Europæus' "Svenskt-Finskt Handlexikon" (Helsingfors, 1853), the word is spelled "Kallio" (*vide* page 42, *sub voce* 'Berg').

LII.—*On new or little-known Birds of North-Eastern Africa.*

By Hofrath Theodor von Heuglin. (Part I.)

(Plate XV.)

I. Hypotriorchis castanonotus, sp. nov.

H. minutissimus, cauda subgraduata: pileo, nucha, uropygio et tectricibus alarum cinereis ex parte ferrugineo limbatis: fronte pallidiore: interscapulio, tergo et scapularibus castaneis: stria supra-oculari, regione parotica, fascia cervicali transversa, tectricibus caudæ superioribus et gastræo candidis: subalaribus albis nigricante fasciatis: rectricibus et remigibus fusco-nigris albescente aut flavescente terminatis, albo guttatis et transversim fasciatis: remige prima extus albo marginata: long. tota 6·9, rostri ab angulo oris 0·5, alæ 4·4½, caudæ 2·10½, tarsi 0·11¾ poll. et lin. Gall.

Hab. In ripis Nili Albi.

My specimens of this bird were procured in the mountains of the watershed of Eastern Central Africa, from localities on the Bahr el Abiad, beyond which no European traveller has yet penetrated. The bird is scarcely larger in size than a Lark. At the first glance it was considered as identical with *Falco semitorquatus* (Smith, Ill. Zool. S. Afr. tab. 1). Considerable differences, however, were discovered after a more careful examination: *e. g.* the back is chestnut-brown in both sexes; the colours of the forehead and of the sides of the neck are different; the tail is somewhat graduated, whereas it is said to be slightly rounded in *H. semitorquatus*, and is distinguished by a light-coloured marginal band of nearly two lines in breadth.

I give here the description of a male bird, certainly quite adult. The head above and neck are cinereous, with a somewhat ferruginous shade; the forehead is rather lighter (but not quite white); the head below, a streak above and behind the eye, the ear and the sides of the neck, and, finally, a band across the neck, are pure white. Back and scapularies bright chestnut-brown; rump and wing-coverts cinereous, partly margined with reddish brown; upper tail-coverts white, partly with cinereous longitudinal stripes. Wings and tail black, inferiorly dark brownish grey, with white spots, each of which is interrupted by the shaft of the feather and passes interiorly into transverse lines: these spots are absent on the first feather of the wing, but its entire outer margin is of a whitish colour. The primaries, secondaries, tertiaries, and the tail-feathers have a rather broad reddish-brown margin near the extremities; the margin is narrowest on the primaries, although sharply marked. The under-coverts of the wings are greyish white, with blackish transverse bands. The anterior side of the tarsus is covered with feathers for one-third of its length. Bill, cere, a naked ring round the eye, and tarsi yellow; extremity of the bill bluish; the posterior and interior claws brownish, the middle and exterior yellowish; the iris is yellow*. The second primary is the longest, the first and third are rather shorter.

I know nothing of the habits of this rare bird. Up to the present we have received it only from the environs of Méré (*i. e.* mountain) Belenia, on the White Nile, and I do not believe that it ranges beyond lat. 5° N. It is partial to tall trees with thick foliage—for instance, Tamarinds and Mimosas, and probably, like *H. semitorquatus*, feeds on small birds, lizards, and coleoptera. The female appears to be scarcely different from the male.

The other species of *Hypotriorchis* which I have observed in North-Eastern Africa are the following:—

1. H. SUBBUTEO.

Sometimes seen in Egypt during the winter; but it appears to be found there all the year through. I killed two old birds in the months of June and August 1852, in Siut (Upper Egypt), and in Dongola.

2. H. ELEONORÆ (Géné).

Rare, and only as a migratory bird in Nubia and on the Blue Nile, but frequent on the madrepore islands of the different parts of the Red Sea. In the month of August 1857, I found three nests in the Archipelago of Dahlak, some of which contained young birds quite recently hatched. (Cfr. Hartlaub in 'Ibis,' 1859, p. 338.)

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* The original note has been lost, and I make this statement from memory.

3. H. CONCOLOR (Gould, Birds of Eur. tab. 25).

The true *H. concolor* is rare in the tropical parts of North-Eastern Africa. I obtained specimens on the Bahr el Abiad, from Tigreh (Mareb and Valley of the Takásseh) and from Amhara (Lake of Tana and. sources of the River Takásseh). I found this bird always singly, and in countries covered with forest, between 2000 and 6000 feet above the level of the sea. The iris is dark brown, and the eye remarkably large. The West-African form (*F. ardosiaceus*, Vieill.), which is found also in Madagascar, is specifically different from the East-African.

4. H. RUFICOLLIS, Sw. (Swains. Birds of West Africa, tab. 2.)

This species is not scarce, and is found in pairs on the Blue Nile, southward from the 14th degree to Fazogloa, nearly always on Dolléb-palms. It is only occasionally found in Abyssinia and along the Bahr el Abiad.

5. H. ÆSALON (Gm.).

I have found not rarely old and young specimens of this pretty species in Egypt, between the winter and the month of May, especially in the more northern parts. It resorts by preference to the acacias and sycamores in the cultivated portions of the country.

6. H. HORUS, Heugl. (*Falco gracilis*, A. Brehm in Naumannia, 1856, p. 232, cum fig.)

I have rarely observed this species in the rocky deserts of Egypt and Nubia. A. Brehm has described a young specimen of this species, killed by myself in August 1851 near the so-called "Fossil Forest," at the Mokatam Mountains. The figure published by him is from a drawing made by me from nature. The young specimens of this species are very similar to those of *F. eleonoræ*, but the two birds are decidedly different. The plumage of the old bird is not known to me, but only an intermediate coloration, with the upper parts slate-blue, spotted with darker colouring, as in *F. ruficollis*.

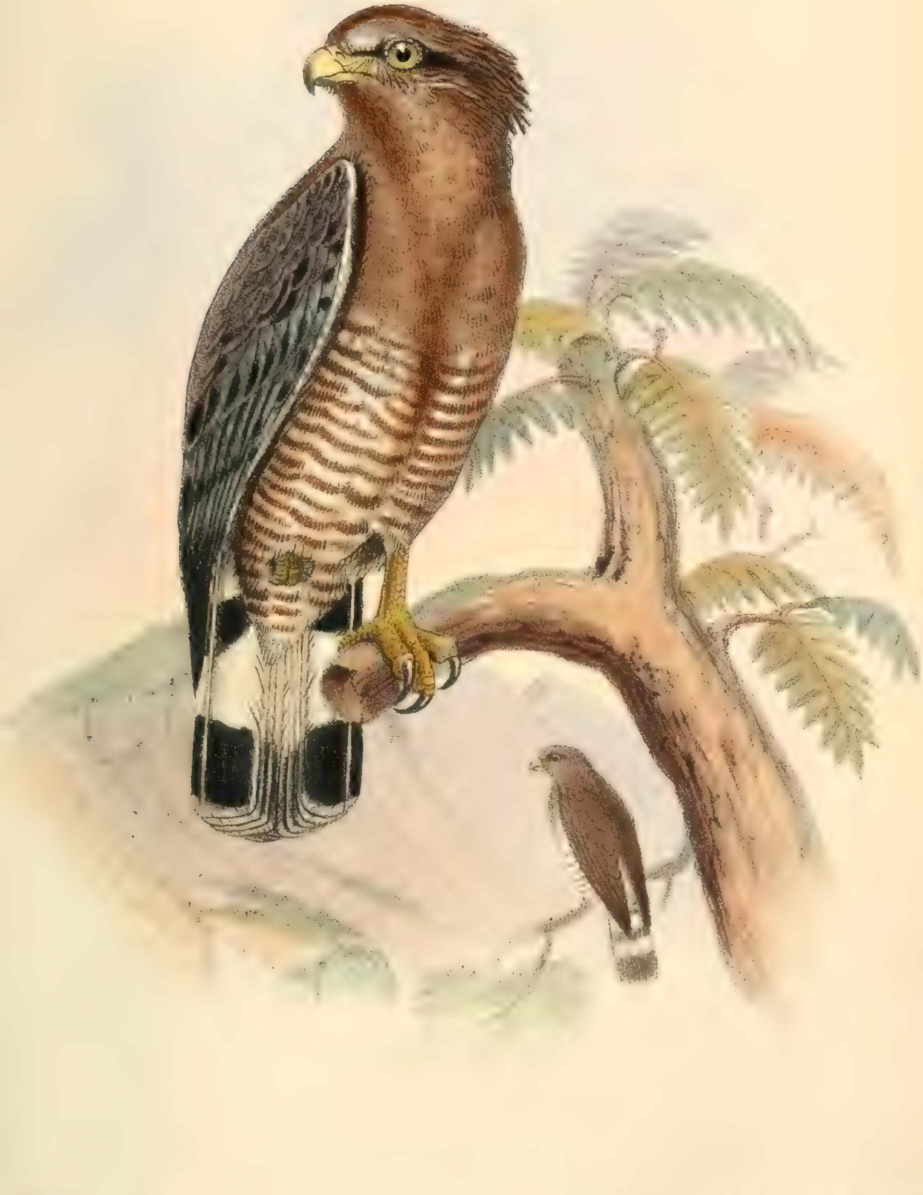
The *Falco semitorquatus* of Sir A. Smith is said by De Filippi (Rev. Zool. 1853, p. 289) to occur on the upper parts of the Bahr el Abiad, but I suppose that that learned ornithologist has confounded it with my *H. castanonotus*. So far as I know, *Falco* *semitorquatus* has been found hitherto only in South Africa, in the country of Old Latakoo.

II. Circaëtus zonurus, P. Würtemberg. (Plate XV.)

C. cinereo-fuscus, subtus pallidior, epigastrio, ventre et hypochondriis transversim albo fasciatis, subcaudalibus et tibiis albis, brunneo fasciatis; cauda alba, hujus basi et fasciis duabus latioribus nigris: remigibus et rectricibus supra fusco-cinereis, subtus albidis nigro terminatis et fasciis transversalibus vi–ix distinctissimis notatis: subalaribus candidis ex parte dilute fusco variegatis: long. tota (maris adulti) 19·5, alæ 14·9, rostri a rictu 1·5½, tarsi 2·7¾, caudæ 7·9 poll. et lin. Gall.

Hab. In ripis Nili Albi.

Prince Paul von Würtemberg collected a specimen of this species of *Circaëtus* nearly twenty years ago in the southern part of the province of Fazogloa, between the Blue Nile and the rivers Túmad and Yabús. Although marked in so noticeable a way, it has not yet been accurately described with the name which properly belongs to it, but only mentioned in some ornithological communications, such as the 'Systematische Uebersicht' of the birds of North-Eastern Africa of Dr. E. Rüppell. The only specimen known until lately is in the collection of its discoverer. It has been shortly characterized by J. v. Müller, in his 'Contributions to the Ornis of Africa,' as *Circaëtus cinerascens*; but the figure there given by him is not to be recognized. The species was not found again until the year 1853, when I discovered it on the banks of the Beni-Schangallo, and at a later period on the Bahr el Abiad, and sent specimens of it to several European museums. *Circaëtus zonurus* is the smallest of the African species of *Circaëtus*, measuring only from 19 to 20 inches (French) in length. The bill is very robust; the face is well provided with strong bristles; the head and eyes are large, the former being surrounded by broad feathers, which the bird, when excited, can raise up, like *Helotarsus ecaudatus*. The wings are comparatively long, without extending to the extremity of the tail, which is somewhat rounded. The tarsi are covered with feathers for nearly one-half their length, and strongly reticulated; the claws are robust, and but slightly bent. Each toe has anteriorly on its upper surface two entire shields, whilst the two or four follow-



[illegible] M & N Hanhart Imp[illegible]

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ing are divided along the middle. The region below the eye is covered with short, dense, downy feathers beneath the bristles. The upper parts of the body are smoky grey; the sides of the forehead whitish; the cilia black; the uropygium and the upper tail-coverts are dark coffee-brown, with white margins; the under parts greyish brown; sides and middle of the belly with white cross-lines and dots; under tail-coverts and feathers of the tarsi white, the latter with light-brown cross-lines, the former with scattered broadened arrow-shaped spots of the same colour. Wings above dark ash-grey; below whitish, with broad brownish-black tips and narrow well-marked dark cross-bands, on the primaries from four to six, but increasing in number and breadth on the secondaries. The inner webs of the primaries become lighter towards the roots. The bend of the wing and under wing-coverts are pure white, the latter with some brownish transverse or arrow-shaped spots in younger birds: tail white, with the base blackish, sometimes with a dirty greyish tinge above, with two broad brownish-black cross-bands and a narrow whitish extremity. Some wing-feathers, apparently quite recently developed, show white margins. The fourth primary is longest, extending nearly to the end of the tail; the third is rather shorter; the first is nearly as long as the eighth. The primaries from the third to the fifth are emarginated exteriorly, and from the second to the sixth interiorly. The whole length of an adult male is 19 in. 5 lin.: wing 14 in. 9 lin.: bill from gape 1 in. 5½ lin.: tarsus 2 in. 7¾ lin.: tail 7 in. 9 lin.: middle toe 1 in. 5 lin., claw of same 9¼ lin.: hind toe 9½ lin., claw of same 10 lin. (French measurement).

The plumage of the *immature* bird is of a more dirty brownish-grey colour, the white transverse streaks on the belly are fainter, and the scapularies have ferruginous margins. The male and female are scarcely distinguishable in colour, and very little different in size.

The iris is light brownish yellow; bill and cere pale yellow, the former with horny-black extremity; feet bright ochreous; nails horny black.

I am sorry not to know anything about the habits of this bird. I myself saw it only once, perched on a mimosa which was half-withered and scarcely 15 feet high, above a narrow fissure in the rocks. This specimen was not shy at all, and permitted my approaching it to a distance of 40 yards. The specimens which were brought killed to me, had been also found in similar localities, namely along torrents surrounded by groves of trees, and never in the open spaces which form the favourite resorts of *C. gallicus* and *C. pectoralis*. If I recollect right, the contents of the stomach of the one killed by myself were entirely composed of frogs.

The range of *C. zonurus*, on the sources of the Nile, does not appear to extend northwards beyond 10° North lat. I have never received it from Abyssinia, or Kordofan, or from the northern parts of Sennaar.

The figure of this bird given by J. von Müller, under the name *Circaëtus cinerascens*, is very incorrect : the head is much too small; the bristles round the base of the bill are omitted; the general coloration is too light; the lower covers of the tail are grey instead of white; the feet are too slender and shielded, instead of reticulated; the nails are too large; the transverse bands on the lower side of the tail much too light, and those on the wings much too dark, compared with the ground-colour!

I take this opportunity of adding remarks on the other species of *Circaëtus* living in Africa.

1. Circaëtus gallicus, Gm. (*A. brachydactyla*, Meyer and Wolf.)

The European species of *Circaëtus* makes its appearance in Egypt in pairs or small flocks in the month of September, and goes upwards along the banks of the Nile to the prairies of Kordofan, Sennaar, &c., where it stays during the winter, returning through Egypt in February and March. It is not unfrequently seen during the autumn sitting on low hills and sandbanks, sometimes in shallow water, hunting for reptiles, which are driven out of their holes and retreats by the increasing waters of the river. In the prairies, this species is found sometimes at a very great distance from water; and single specimens appear to stay all the summer within the tropics, as I infer from an individual which I killed in Eastern Sennaar in the middle of

May. Rüppell has found this species in Arabia, and A. Brehm has established a separate species, *C. orientalis*, which, he says, is a stationary bird in Egypt: this species is said to be somewhat smaller than *C. gallicus*; all the lower parts are white, with light-brown spots, and the throat is not dark; the tail of the female is 2 inches shorter than in *C. gallicus*. Scarce in West Africa (Hartlaub).

We must wait for future researches to decide the question whether *C. fasciatus*, mihi (List of Birds of N.E. Africa, no. 29), proves to be a good species. I have not, at present, the typical specimen with me, upon which the species was established. It is similar to *C. gallicus* in size and coloration of the back; all the lower parts are white, with broad dark cross-bands. I have observed it in the prairies of Southern Kordofan and Eastern Sennaar during the winter, where it appears to occur rather frequently.

2. CIRCAËTUS THORACICUS, Cuv. (*C. pectoralis*, Smith.)

This species is not scarce in Abyssinia and round the sources of the Nile. The most northern part of its range, according to my observations, is the province of Dongola, where we killed an old female in the month of August, in the neighbourhood of the ruins of Argo.

3. CIRCAËTUS CINEREUS, Vieill., is, according to Jules Verreaux, the immature state of *C. thoracicus*, which opinion, however, requires further confirmation. *C. cinereus* is more slender, has a brown iris and lead-coloured feet. The markings of the tail, besides, are very different, and I have never observed intermediate forms between the two birds. Dr. Rüppell found *C. cinereus* in Abyssinia, and I obtained examples of it on a tributary of the river Rahad, and on the Blue Nile. I have mentioned, in my list of birds of N.E. Africa, that two of the specimens collected by me differ from Rüppell's individual in having pure white and very narrow bands across the tail. Rüppell's specimen is very large, measuring 2 feet 3 inches in length. This naturalist says (Neue Wirbelth. p. 35) that his *Falco funereus* (which certainly is identical with *C. cinereus*, Vieill.) differs from *C. gallicus* and *C. pectoralis* in having the bill much stronger, the inner and hind toes provided with very

robust claws, and the tail rectangularly truncated, and short, compared with the wings.

4. CIRCAËTUS MELANOTIS*, Verreaux, has been discovered only lately in West Africa (Bissao), and is described by Hartlaub (Syst. Ornithol. W. Afr. p. 7).

I take this opportunity to remark, that *Spizaëtus zonurus*, Müll. (Beiträge zur Ornithol. Afr. tab. 1), has been described by Prince Bonaparte as *Spizaëtus spilogaster* (Rev. Zool. 1850, p. 487), and that I have added another synonym, *Spizaëtus leucostigma* (Syst. Ueb. d. Vög. N. O. Afrika's, p. 17, sp. 25). This audacious bird of prey is not found in Upper Abyssinia, as stated by v. Müller, but, on the contrary, in the lowlands, in the so-called Kolla, and in Eastern Sennaar, downwards to the Blue River. It occurs most frequently, always in pairs, in the valleys of Takepeh and Mareb, and in the province of Galabat, along the torrents joining the rivers Schimfa (Rahad) and Guang, where it appears to arrive in the rainy season (April and May), and to build its nest in high trees. I also observed several times, in the same localities, the beautiful *Aquila verreauxii*, Less., which species, without any doubt, is entirely different from *Aquila vulturina* (Daud.) (Levaill. Ois. d'Afr. tab. 6). The latter species has not been recognized again, to my knowledge. *Aquila verreauxii* penetrates still more deeply into the mountains than *Circaëtus spilogaster*, not rarely into the "Deka," which region begins at from five to six thousand feet above the level of the sea.

The supposed aberrant plumage of very old specimens of *Aquila bonellii*, as described by A. Brehm in 'Naumannia,' is probably referable to *Spizaëtus spilogaster*, DuBus. This bird, however, is in fact an intermediate form between *Aquila* and *Spizaëtus*, to which *A. bellicosa*, Daud., most approaches.

[To be continued.]

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* In company with Mr. J. H. Gurney, we have carefully examined the two types of this species, which are now in the Norwich Museum. There is no doubt of their identity with *Circaëtus zonurus*, as here described, and the range of this bird is thus extended into Western Africa. Mr. G. R. Gray's *Circaëtus fasciolatus*, Mus. Brit., from Natal, is, again, a very closely allied bird, and may ultimately prove to be specifically inseparable.—ED.

LIII.—*Remarks on* Mr. A. Newton's "*Suggestions for forming Collections of Birds' Eggs**".

"There's life in the old land yet!" was our involuntary exclamation, when, on taking up Mr. Newton's pamphlet, we found that though our grandchildren in the New World and at the Antipodes are thought capable of instructing their aged parent in the use of the ballot-box, yet their grandmother still knows how to teach them to suck eggs.

We learn from Mr. Newton, that, before the appearance of his work from an English press, he had already given 3000 lessons to our Yankee cousins in the art and 'mysterie' of sucking eggs. We might have been captious with our valued friend for not giving ourselves the first benefit of his instructions; for, so far as our acquaintance with British collections enables us to form a judgment, we think his lessons are still much needed at home. But probably his modesty induced him to believe them superfluous, at least for the readers of the 'Ibis,' and we can only rejoice that his 'Suggestions' are now accessible to all.

To our late and deeply-lamented coadjutor, Mr. Wolley, Mr. Newton attributes the chief merits of his 'Suggestions'; but certainly no apology was required for them from one, whose collection now stands indisputably at the head of the oological museums of the world.

We cannot too emphatically repeat the remark in Mr. Newton's preface, that "if the study of Natural History is to be much benefited by an extended knowledge of Oology, it is of the utmost importance that our knowledge of it should rest on a firm and truthful basis, and this end can only be obtained by unremitting caution and scrupulousness on the part of egg-collectors." Again, "The main points to be attended to, as being those by which science can alone be benefited, are IDENTIFICATION and AUTHENTICATION." To each of these topics Mr. Newton devotes a distinct section, and their importance cannot be too strongly impressed upon all collectors. It is melancholy to see what sums of money and simple zeal are often squandered on the most worthless accumulations from the shops of dealers. In too many instances, especially with respect to so-called *British* collections, the class of dealers have exercised the most pernicious influence, destroying confidence and giving false impressions from the basest motives. We should not like to repeat here a painfully true remark of our late friend Mr. Wolley on this subject. As an instance, and by no means an uncommon one, of what is meant, we have seen an elegant cabinet beautifully fitted up and supplied by a London dealer to order for a lady much interested in natural history. This cabinet professed to contain a specimen or two of the egg of every British bird, with the two exceptions of the Swallow-tailed Kite and Great Auk. These two were probably omitted to give an air of authenticity to the rest. We looked through the cabinet. The first two drawers taught us how largely the Raptorials are indebted to the aberrant tendencies of the poultry-yard. The class can no longer be defended from the vengeance of the fowl-fancier. It would be only tedious to relate how strong was the generic affinity of the White's Thrush and Gold-vented Thrush with our Mavis and Blackbird, how close the connexion between the Waxwing and the Shrike, or how the whole of the *Scolopacinæ* must have left their eggs under charge of the Snipe and the Redshank. But beyond the barefaced robbery of such a system is a yet greater evil in the erroneous ideas propagated by such collections, which, were Mr. Newton's principles universally adopted, would be effectually corrected.

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* "Suggestions for forming Collections of Birds' Eggs. By Alfred Newton, M.A., Fellow of Magdalen College, Cambridge, &c." London: E. Newman, 1860.

On *Identification,* our author remarks the necessity in most countries of obtaining specimens of the parent bird by shooting, snaring, or trapping. We hope, however, he does not intend to urge this course in every instance, else we should indeed be waging a war of cruel extermination. It is necessary to do it occasionally; but we would really suggest more mercy than our friend seems inclined to show, and would refer him *sometimes* to the Levitical law on the subject. Suppose, for instance, a collector to be in a district where Cetti's Warbler breeds. When he has satisfied himself of one nest, what possible occasion can there be for a further massacre of the innocents in the case of subsequent nests? We would add here, that we have always, in the case of passerine birds, found horsehair nooses placed on the nest the easiest and most satisfactory mode of identification, and one that greatly economizes the collector's time. We are glad Mr. Newton has mentioned Mr. Hancock's method of preserving birds by a few drops of pyroligneous acid in the mouth and vent, a recipe we have ourselves proved with success in warm climates.

On *Authentication,* our author presses the "writing in ink on the shells not only the name of the species to which each belongs, but also, as far as the space will admit, as many particulars relating to the amount of identification to which the specimen was subjected, the locality where, the date when, and name of the person by whom they were taken, adding always a reference to the journal or note-book of the collector, wherein fuller details may be given." The local name only should be used for eggs brought in by natives; or if the scientific name be added, it should be in brackets; thus, "Tooglee Aiah (*Squatarola helvetica*)." [We wish Mr. Newton would tell us in confidence whence we could get Tooglee-aiah brought in to our own collection.] The importance of each collector adding his initials or monogram to all eggs taken by himself is not forgotten.

Another section is devoted to the description of egg-blowing implements, and three pages are partially occupied by figures of weapons which we should be sorry to show to a nervous lady on her way to the dentist, and which might teach a presumptuous grandchild that it is no light affair to suck eggs. Let not, however, the tyro imagine that he must expend a fortune at the surgical instrument maker's. The implements are simple, though some of them we should be inclined to reckon among the oologist's 'articles de luxe.' With a pin, a straw or blowpipe, an old rat-tailed file, a pair of fine-pointed scissors and a penknife, very workmanlike specimens can be turned out. Still every regular collector will find a use for each implement figured by Mr. Newton; but in egg-blowing, as in many other things, more depends on the workman than on the tools. We had rather trust a chipping egg to the manipulation of a certain well-known, though young, ornithologist with his pin and penknife, than to many others with a whole armoury of instruments. We can heartily second Mr. Newton's advice to have handles to the drills.

The section on the preparation of specimens contains many useful hints, the very simplicity of which has led them to be forgotten till after many a lesson of bitter experience; such, *e. g.* as keeping the egg from the light while drying, holding it over a basin of water while operating, the proper method of packing safely, &c. How many a collector has groaned on the reception of a box packed with sawdust! At page 12 we have an admirable method given for strengthening hard-set eggs during the process of emptying their contents. We may, perhaps, venture to add our regret that Mr. Newton should have tolerated by any suggestion, while he most justly condemns, the semibarbarous *two-hole* system.

The concluding observations contain many valuable hints on identification and the methods of attaining it. The field naturalist must never forget that the more closely species approach each other, the more important as well as the more difficult is identification. For this reason we always admired the nerve with which a worthy fellow-traveller used ruthlessly to smash every unidentified capture, and can re-echo his exclamation, "An identified duck is the most valuable of eggs!"

We can only now most heartily thank Mr. Newton for his lesson both to grandmother and grandchildren in blowing eggs, and hope that he will follow up his suggestions by other *brochures* on the arrangement of cabinets, and the collection of skeletons or portions of skeletons, a subject on which none can speak with more authority.

LIV.—*Recent Ornithological Publications.*

1. English Publications.

Among the "Zoological Notes from Aneiteum in the New Hebrides," by Mr. J. MacGillivray, in the August number of 'The Zoologist,' is a description of a supposed new species of Petrel (*Procellaria torquata*), allied to *P. cookii* and *P. mollis*. This bird breeds in Aneiteum "in burrows in the wooded mountains of the interior of the island, the highest of which attains an elevation of 2788 feet."

Mr. Eyton has issued the fourth and fifth numbers of his 'Osteologia Avium.'

In Mr. Bree's 'Birds of Europe,' which has now reached its twenty-seventh number, will be found Mr. A. Newton's account of the breeding of the Red-throated Pipit (*Anthus cervinus*, Pallas = *A. rufogularis*, Brehm). This little-known bird was met with by him in June 1855, when in company with Messrs. J. Wolley and W. H. Simpson, in a restricted locality in Eastern Finmark, between Wadsö and Nyborg, and several well-identified nests were procured. There can be no doubt of the validity of this species, which, indeed, has been already vindicated by Herr Pastor W. Pässler, in a recent number of Cabanis' Journal (1859, Heft vi.).

In the "Outlines of the Natural History of the Isle of Wight, by A. G. More, F.L.S.," appended to Mr. Venables's recently published Guide-book to that island*, we are presented with a good account of its ornithology. Though the arrangement of the species into 'Residents,' 'Summer Visitors,' &c. is, in our opinion, objectionable, as rendering it difficult for tourists, or even general students, to discover, without much loss of time, in which of the five groups any particular species is to be found, yet, with this exception, Mr. More's treatment of the subject is very commendable, and affords a favourable contrast to the carelessness exhibited in the Natural-History chapters in most Handbooks. Without counting a few undoubted foreigners, which are said to have occurred, 220 birds are enumerated as having been captured in the island; but of these we think that the appearance of at least four, *Aquila chrysaëtos*, *Parus cristatus*, *Picus martius*, and *Fratercula glacialis* (this last the only supposed instance of its occurrence in the British Isles), rests on authority hardly sufficient. "It is remarkable," says Mr. More, "that the Nuthatch [*Sitta europæa,* auct. Brit.] should not yet have been observed in the Isle of Wight, since it is a bird common in Sussex, and considered by Mr. Knox as partially migratory." *Falco peregrinus* still breeds in two or three localities, "but these fine birds have been shamefully ill-used during these past few seasons. Not only have their eyries been regularly plundered, but the parents shot and trapped on the nest itself." Of *Fregilus graculus* the doom seems as melancholy. "As it is, the Chough is already extinct in Sussex, and the time is perhaps not far distant when it will disappear from our cliffs as well." The Hoopoe (*Upupa epops*) *almost annually* occurs, and when it presents itself, no doubt meets with the same unhappy reception as awaits it in other parts of England!

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* 'A New Guide to the Isle of Wight, &c., by the Rev. E. Venables, M.A.' London (Stanford), 1860.

The first part of the Journal of the Asiatic Society of Bengal contains Mr. Blyth's Report on late accessions received by the Zoological department, amongst which is a series of birds sent by Mr. Swinhoe. Mr. Blyth's notes on these will be read with interest, and, with his nomenclature, should be compared with Mr. Swinhoe's article in this Journal. Some additional novelties have appeared from the Andamans, including a Woodpecker (*Mulleripicus hodgei* !), an Anthus (*A. rufosuperciliaris*), and a Thrush (*Oreocincla infra-marginata*) considered as new, and some other species, known from elsewhere, but now recognized in the Andamans for the first time. A description of Mr. Blyth's new Cassowary (*Casuarius uno-appendiculatus*) is given, p. 112. Remarks on this bird have been already given (*anteà,* p. 402).

2. French Publications.

In No. 5 of the 'Revue et Magasin de Zoologie' for the present year, M. Jules Verreaux describes a new Wader from Eastern Siberia (of which a figure is also given), under the name *Micropalama tacksanowskia.* Mr. Blyth, of Calcutta, informs us in a recent communication that this interesting bird is evidently his *Pseudoscolopax semipalmatus* (see *anteà,* p. 90) in summer dress —a species which he had formerly referred to *Macrorhamphus* (Journ. As. Soc. Beng. xvii. p. 252). "The seasonal change," says

Mr. Blyth, "is accordingly similar to that of *Limosa rufa*, which is exactly what I had anticipated. I know of but two Indian examples, both obtained in winter-dress,—one by myself in the Calcutta provision-bazaars (Dec. 12th, 1847), and the other a year or two previously by Jerdon, somewhere on the Coromandel coast. Verreaux's bird being from N.E. Asia (Dahuria), we may expect this to turn out to be a species chiefly of Eastern Asia."

We have received the sixth part of M. Malherbe's Monograph of the *Picidæ*. It continues the description and illustration of the multitudinous species of true *Picus*.

3. German Publications.

In the last part of Cabanis' 'Journal für Ornithologie' for 1859 will be found some descriptions of new or little-known birds, by Herr F. Heine, from his father's celebrated museum. *Coloburis rufiventris* and *Tanysiptera margarethæ* are evidently from Mr. Wallace's recent Batchian and Gilolo collections. The former seems to be Mr. G. R. Gray's *Pitta inornata* (P. Z. S. 1860, p. 350), the latter his *Tanysiptera isis* (ibid. p. 347). We cannot agree with Dr. Quistorp in doubting the specific difference of *Milvus ater* from *M. regalis*, as he seems inclined to do (*vide* p. 472).

The second number of the same Journal for the present year contains, amongst other articles, a continuation of Dr. Hartlaub's Essay on the Ornithology of Madagascar, and an article by F. Heine on the species of *Cyanocorax*. In the latter, several new species (or local subspecies ?) are recognized.

Herr August von Pelzeln has made a valuable contribution to the 'Sitzungsberichte' of the Imperial Academy of Vienna (see vol. lxi. p. 319 *et seq.*), in the shape of some details concerning the ornithology of Norfolk Island. The well-known artist, F. L. Bauer, who accompanied Captain Flinders's expedition to the Antipodes, in the commencement of the present century, as botanical painter, having died in 1826, his collections and drawings were sold by auction, and were purchased by the Imperial Museum of Natural History. From their precious materials, and some other acquisitions of the Imperial Cabinet, Herr von

Pelzeln has been enabled to furnish us with a list of over twenty species of birds, which formed part of the Avifauna of this little speck in the earth's surface in the beginning of the present century. Several of these have before now, in all probability, entirely disappeared, so that information about them is doubly welcome.

The species indicated as found in Norfolk Island are the following :—

1. *Astur approximans.* (A.)
2. *Climacteris scandens.* (A.)
3. *Zosterops tenuirostris.*
4. —— *albogularis.*
5. *Gerygone modesta,* sp. nov.
6. *Turdus poliocephalus.*
7. *Rhipidura assimilis,* sp. nov.
8. *Pachycephala longirostris.*
9. *Campephaga longicaudata.*
10. *Aplonis obscurus.* (N. Z.)
11. *Nestor norfolcensis.*
12. *Hemiphaga spadicea.*
13. *Leucosarcia picata.* (A.)
14. *Charadrius xanthocheilus.* (A.) (N. Z.)
15. *Limosa baueri,* sp. nov. (N. Z.)
16. *Totanus glottis.* (A.)
17. *Notornis alba.*
18. *Anas superciliosa.* (A.) (N. Z.)
19. *Puffinus chlororhynchus.*
20. *Procellaria atlantica.*
21. *Phaëthon phœnicurus.*

Of these twenty-one birds, the last three are oceanic species which do not affect the character of the fauna. Of the eighteen that remain, according to Herr von Pelzeln, nine are peculiar to the island, as far as is hitherto known ; six (marked A. in our list) are common to Australia ; four (marked N. Z.) also occur in New Zealand, and *Notornis alba* is supposed to be (or rather to *have been*) also found in Lord Howe's Island. With regard to the *Nestor,* Herr von Pelzeln has shown why he is disposed to regard this bird as having been different from the *Nestor productus* which inhabited the little adjoining island called 'Philip Island.' The example supposed to have been of this species, formerly in the Imperial Collection, is unfortunately missing, and the only evidence available on the subject is that of Bauer's drawing, which was taken from a living subject in Norfolk Island on the 19th of January, 1805.

Notornis alba is established on a specimen acquired at the sale of the Leverian Collection, which was, without doubt, the type of *Fulica alba* of White's Voyage*, and the *Gallinula alba* of Latham. This bird has been considered by Temminck and G. R. Gray to be an albino variety of the well-known *Porphyrio melanotus*; but Herr von Pelzeln regards it as certainly distinct, and probably referable to a second species of the highly interesting quasi-extinct genus *Notornis*. Of the original type of this genus (the *Notornis mantelli* of New Zealand), but two specimens, we may remark, are known to exist, both of which are now in the British Museum.

4. American Publications.

The following extract from the 'Proceedings of the Academy of Natural Sciences of Philadelphia' for March 20th last will be read with interest, and explains itself:—

"Dr. Leidy announced (p. 86) the presentation by Dr. T. B. Wilson of his entire collection of birds, amounting to 26,000 mounted specimens and 2000 skins.

"Mr. Cassin said, in relation to the presentation of the collection of birds now in the Museum of this Academy by Dr. T. B. Wilson:—

"The collection of birds in the Museum of the Academy has been regarded for some years as the collection of this Academy, and is extensively known and referred to as such by authors and naturalists. The donation this evening, so liberally and characteristically made by Dr. Wilson, involves only a change of ownership, or transfer of title, with the further important consideration, that it secures the collection to the Academy, as intended by Dr. Wilson, in perpetuity, and without contingency.

"Previous to this donation the collection has been accumulated from various sources, since 1845, with great judgment, and with constant and unremitted exertion on his part, and also on the part of his brother, Mr. Edward Wilson, long resident in Europe. The latter-named gentleman has most ably and successfully seconded his brother in the greatest enterprises ever entered upon in America, having for their object the promotion of the zoological sciences and of general natural history. The results mainly have been, at this period, the formation of the library of this Academy, and of its collections in all departments, but especially in mineralogy, palæontology, conchology, crustacea, ichthyology, and ornithology.

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* White's Journal of a Voyage to New South Wales, p. 238 (*cum tab.*).

"The very extensive and comprehensive series now presented, with the comparatively small collection previously owned by the Academy, comprise one of the most complete ornithological museums extant. It is, in fact, one of the four great collections of birds in the world, and, so far as can be ascertained from published catalogues, is fairly entitled to be considered as presenting facilities for study in this favourite branch of natural history equal to those of any other institution.

"Mainly, the collection of Dr. Wilson was based on that of General Massena, Duke of Rivoli, and his son, M. Victor Massena, Prince d'Essling, which was regarded as the finest private collection in Europe. This was acquired by purchase in 1846, and brought to this country. Various other valuable and more or less extensive collections have been added since that period, including Mr. Gould's Australian birds, which are the types of his great work, 'The Birds of Australia,' and embracing all the species then known, except five only. Another important collection, mainly Parrots, Humming-birds, and Tanagers, was that of M. Bourcier, a distinguished French ornithologist; and quite equally so was a collection made in the interior countries of India by Capt. Boys, of the East India Company's service. Very important, too, are collections from the Leyden Museum, through the influence of the eminent naturalists now or lately attached to that great institution, particularly the celebrated Temminck; and many others obtained in Europe through the faithful and judicious exertions of Mr. Edward Wilson for the interests of this Academy.

"Numerous other smaller additions have been made, whenever opportunity presented, in this country, by Dr. Wilson, and also have been derived from European naturalists by exchange and purchase, to the extent of several thousand specimens. Messrs. Verreaux, the well-known commercial naturalists and ornithologists of Paris, have been of exceeding service; and but little less so has been Mr. John G. Bell of New York, the principal commercial naturalist in this country, whose high interest in the prosperity of the Academy, and scientific knowledge, has never failed to be exerted, and always has been of great value in the extension of the collection. Mr. John Krider, Mr. William S. Wood, and Mr. James Taylor of this city, have also furnished to Dr. Wilson many valuable specimens; and all of these gentlemen have invariably shown the utmost cheerfulness and liberality in their business with the Museum of the Academy.

"The collection now presented by Dr. Wilson has been derived from the following sources, and includes specimens nearly as here enumerated :—

	Specimens.
Rivoli collection, first purchase	12,500
Rivoli collection, 2nd purchase	2,500
Mr. Gould's Australian collection	2,000
M. Bourcier's collection	1,000
Capt. Boys's collection	1,000
Mr. Edward Wilson's collections in Europe, including collections from the Leyden and British Museums	4,500
Dr. Thomas B. Wilson's collections in Europe	1,000
Dr. Thomas B. Wilson's collections in the United States.	1,500
Total now presented to the Academy	26,000

"It may be of interest to add, that the collection previously owned by the Academy comprises about 3000 specimens, including a very superior North-American series derived from nearly all ornithologists in the United States, who have invariably shown the greatest interest in the formation of the large collection of this Academy. The aggregate number of specimens exhibited, and now belonging to the Academy, is therefore about 29,000 birds."

The second part of Mr. Cassin's Catalogue of Birds collected during the Darien expedition is given, p. 188. A new and remarkable type among the *Formicariidæ* is named *Pittasoma michleri.* We hope Mr. Cassin will eventually give us a figure of this interesting species. The total number of species collected during the expedition amounts to 144.

We have to acknowledge Prof. Baird's kindness in sending us a copy of the two handsome volumes* formed by a reissue of his well-known Report on the Birds collected during the Railroad Exploring Expedition so often referred to in these pages. This work is indispensable to any one who takes an interest in the ornithology of the New World, and we have no hesitation in recommending it to our subscribers as one of the most useful and complete treatises upon the birds of any one known country which has ever appeared. The advertisement to the present edition, which we subjoin, sufficiently explains its contents and its objects :—

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* 'The Birds of North America; the descriptions of species chiefly

"The present work is, in part, a reprint of the 'General Report on North American Birds,' presented to the Department of War, and published in October 1858, as one of the series of 'Reports of Explorations and Surveys of a Railroad Route to the Pacific Ocean.' In this volume, however, will be found many important additions and corrections, including detailed lists of plates, both numerical and systematic, descriptions of newly-discovered species, &c., not in the original edition.

"The Atlas contains 100 plates, representing 148 new or unfigured species of North American birds. Of these plates about fifty appear for the first time, having been prepared expressly for this work. The remainder form the ornithological illustrations of the Reports of the Pacific Railroad Survey, and of the United States and Mexican Boundary Survey under Major Emory, and are distributed throughout the numerous volumes composing those series. All have, however, been carefully retouched and lettered for this edition, and quite a number redrawn entirely from better and more characteristic specimens. In fact, the plates of the Atlas have been prepared expressly for the present edition with the utmost care and attention.

"In the volume of text will be found a complete account of the birds of North America, brought down to the present time, including accurate descriptions of all known species; their arrangement in the genera and families recognized by modern zoologists; their geographical distribution; and, as far as pos-

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based on the Collections in the Museum of the Smithsonian Institution. By Spencer F. Baird, with the cooperation of John Cassin and George N. Lawrence. With an Atlas of 100 plates.' 2 vols. 4to. Philadelphia: Lippincott & Co., 1860.

sible, all other information necessary to a complete summary or manual of North-American ornithology. No other work extant gives a complete ornithology of our country; and it has been the especial object of the authors and publishers to adapt it to the wants of the student and lover of nature, and to present in a condensed form, and at a price within the reach of all, a reliable text-book in this favourite department of natural history. Extended bibliographical notices, embracing full references to very nearly all authors on American ornithology, have been added, and will be found to be of high interest to the student and naturalist.

"The Atlas, embracing as it does 100 plates of birds not figured by Audubon, will be found indispensable to the possessor of that distinguished author's 'Birds of America,' completing it to the present time.

"As stated in the preface, the descriptions and figures in the present work have been taken almost entirely from specimens in the Smithsonian Institution. To the Secretary of the Institution the publishers are under many obligations for facilities in the preparation of this much-extended and greatly improved edition."

Parts of the Pacific Railway Reports, which relate to the natural condition and products of the country traversed near the 47th and 49th parallels of latitude, have likewise been collected together in a separate form, and form a quarto volume, under the title of 'The Natural History of Washington Territory *.' Full details are given about the birds of this country, the portion relating to the Land-birds being from the pen of Dr. J. G. Cooper, and that relating to the Water-birds having been compiled by Dr. G. Suckley, to whose courtesy we stand indebted for a copy of this interesting work.

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* 'The Natural History of Washington Territory, with much relating to Minnesota, Nebraska, Kansas, Oregon, and California. By J. G. Cooper, M.D., and Dr. G. Suckley, U.S.A.' New York: Baillière Brothers, 1859. 1 vol. 4to.

LV.—*Letters, Extracts from Correspondence, Notices, &c.*

Mr. Swinhoe having been placed as Interpreter on the staff of H. E. Sir Hope Grant (the Commander-in-chief of the Chinese expedition), left Hongkong for the north in the steamer 'Lightning' on the 9th of June last. He has favoured us with the following letter, dated—

"At sea, June 16th, 1860.

"We left Hongkong on the 9th of June. On the 12th it blew so hard from the north that we were obliged to put into a bay south of Lam-yit Island for shelter. We remained there until the following morning. During our delay we went ashore; and I send you a sketch of my observations on the place.

"The island of Lam-yit or South-sun, south of which we anchored, is the largest of a group of islands not far from the city of Hing-wha, on the Chinese coast of the Formosa channel. It is about twelve miles in circumference, a muddy creek dividing it nearly into two, and is bounded by a sandy beach and rocks running into the sea. Ranges of hill occur on both sides, chiefly formed, as on the opposite coast of China, of disintegrated granite of hoary aspect, with occasional strips of clay. Natural vegetation is extremely scanty; and not a tree occurs on the island, except a stunted peach or wild pear hidden in some chasm in the hill-side. The little available portion of the flat land is worked by the natives for agricultural purposes; and the sandy soil, strengthened by human manure, is forced to yield crops of rice, ground-nuts (*Arachis hypogæa*), &c., in apparently thriving condition. But it does not require much knowledge of the coast of China to see that it is not upon the produce of the fields that the natives depend for maintenance. They are nominally fishermen, but actually pirates; and a filthier and more squalid race I think I have seldom seen. Their dialect has a few expressions in common with that of Amoy; but the greater part of it is distinct, and would probably be found nearer to that of Hing-wha. We managed, however, to make ourselves understood.

"From the above description of the country, a large or important Avifauna would hardly be expected. I only noted the following species:—

"1. *Accipiter*, sp. Probably the same as the Sparrow-hawk of Amoy.

"2. *Cypselus vittatus*, Jard. & Selb. Building among the huts.

"3. *Hirundo gutturalis*, Scop. Nesting under the eaves and over the doorways of the houses.

"4. *Anthus thermophilus*, Hodgson.

"5. *Motacilla luzoniensis*, Scop.

"6. *Petrocossyphus manillensis* (Bodd.).

"7. *Alauda cœlivox*, Swinhoe. One of the commonest birds in the island. Numbers were singing all around, some on the wing, others while perched on the ground.

"8. *Acridotheres cristatellus* (Linn.).

"9. *Pica sericea*, Gould.

"10. *Ægialites cantianus* (Lath.). Numbers of these little fellows were scampering about the sands all day long. They run with great velocity, and then, with a pretty whistle, spring on wing and fly round and round in long circles. Walking along the beach in the afternoon, when it was blowing hard from the north, we came to a sudden depression in the sand. From this, out ran several of these little Plovers as hard as their legs would carry them. They seemed loth to take wing, and had evidently retired into this hollow to seek shelter from the wind. The males vary somewhat in the intensity of their red and black summer tints.

"11. *Herodias garzetta* (Linn.). One female specimen only was seen and shot. It was evidently a straggler.

"12. *Sterna velox*, Rüpp. Several of these fine Terns were seen at various times, flapping past and uttering their hoarse screams.

"13. *Sterna minuta*, Linn. (?). An elegant little Tern, of this species probably. I know of no other of such small dimensions. A pair of them were flying over the long sand-beach on the south of the island; and one of them perched on the mud for several minutes.

"14. *Anoüs stolidus* (Linn.). This, or an allied species, was seen skimming about towards the sea."

Herr Hofrath Theodor von Heuglin requests us to notice the following *errata* in, and *addenda* to, his "List of Birds observed during a voyage in the Red Sea," published in last year's 'Ibis' (p. 337 *et seq.*) :—

P. 340, No. 24 is *Nectarinia metallica.*

P. 341, No. 29 should be *Acrocephalus stentorius,* nec *turdoïdes.*

No. 32 *a.* ? should be *Calamoherpe pallida,* Gervais.

P. 345, No. 75. The feet of *Charadrius cinereicollis,* mihi, are reddish yellow ; but in the breeding-season, I suppose, bright red. This species is very closely allied to *C. tricollaris,* but smaller, and different, especially in the tail-markings.

P. 347, No. 93. *Numenius tenuirostris* should be *N. arquatus.*

No. 94. "*Limosa rufa* ?" is certainly this species.

P. 351, No. 121. *Sterna,* sp., is probably *Sterna fuliginosa.* I sent a specimen of this bird to Dr. Hartlaub, but he was not able to determine it accurately.

No. 127 ought to be *Dysporus fuscus.* This species is very closely allied to *D. brasiliensis,* perhaps identical with it.

P. 352, No. 130. *Phalacrocorax,* sp., is perhaps *P. melanogaster,* Cuv. (*P. lugubris,* Rüpp.). I found *P. cormoranus* not uncommon in the winter in the Gulf of Suez.

To the Editor of 'The Ibis.'

Fordingbridge, August 7th, 1860.

Sir,—Before perusing the remarks in the January Number of your interesting periodical, of which I am a "Constant Reader," I had entertained many objections to the 'Zoologist List of British Birds,' which I have long felt to be an "unsatisfactory compilation."

It appears to me that a really reliable list of British birds is still a desideratum, and it has occurred to me that such a list, published in 'The Ibis,' or separately, in the form of a pamphlet issued under your auspices, would be esteemed a boon by many interested in the ornithology of the British Isles.

I think it would add to the interest and usefulness of such a list if marks were attached to distinguish those birds which are known to breed in Britain, those whose eggs have been discovered elsewhere, and those whose nidification is still unknown. When the birds are only accidental or occasional visitors to our shores, a mark might be attached to signify from what continent they are most probably stragglers; and there might be no objection to the addition of a supplementary list specifying, as in Mr. Doubleday's 'Nomenclature,' such birds as "have been placed in the British list, but rest on slender evidence, or have been introduced by mistake."

If you consider these suggestions worth submitting to your contributors and readers, I trust we may, ere long, be enabled to welcome the appearance of 'The Ibis' list of British birds, which, by its authenticity, may, I hope, remove or lessen the confusion and uncertainty produced by the various catalogues now published. Yours, &c., T. BEAVEN RAKES.

To the Editor of 'The Ibis.'

The Elms, Camp Hill.

SIR,—On Sept. 26th, 1860, at a meeting of the Birmingham Natural History Association, Mr. A. Franklin, taxidermist, exhibited a magnificent hybrid of the Capercailzie (*Tetrao urogallus*), with the Black Grouse (*T. tetrix*). It was shot this season in Perthshire by a gentleman of our town, and placed in Mr. Franklin's hands for preservation.

The leading characters of this bird are those of the Capercailzie; the bill, however, is black. In 1852 a similar hybrid was shot in the same county.

In 1857, a nest of nine eggs of the Capercailzie was recorded in the 'Perthshire Courier' as taken near Logielmond.

Associating these facts, it seems evident that the extirpation of this bird, which was reintroduced by the Marquis of Breadalbane in 1838–9, is not yet completely effected.

Yours, &c., GEO. R. TWINN.

We believe, on the contrary, that the Capercailzie is rapidly extending itself in Perthshire, and that, in some of the well-preserved parts of that county, both the pure bird and the hybrid between it and the Black Grouse are far from uncommonly met with.—ED.

To the Editor of 'The Ibis.'

Stanley, Falkland Islands,
July 28th, 1860.

Sir,—Permit me to correct a slight error that appeared in the January Number of 'The Ibis' for this year, which Mr. Tristram has been good enough to send me. In the illustrations of the eggs of two Raptorial birds from the Falkland Islands (Plate I.), the second egg (figured as a rare variety of the egg of "*Milvago australis*") is undoubtedly that of the Turkey Buzzard (*Cathartes aura*). See Mr. Gould's description of this egg in the 'Proceedings of the Zoological Society' for last year, p. 93. I know of no variety of egg of *Milvago australis*, except that some are lighter in colour than others, but they are invariably of the same shape.

Yours, &c., C. C. Abbott.

We much regret that this mistake should have been made. It occurred, no doubt, through the way in which the eggs were identified, viz. by numbers attached to them.

We have lately had an opportunity of examining a fine series of birds from the Falkland Islands, collected by Capt. Pack. It contains examples of five different species of Penguins: viz. *Aptenodytes forsteri*, G. R. Gray; *Eudyptes chrysocome* (Forst.); *E. chrysolophus*, Brandt; *E. papua* (Forst.), and *Spheniscus magellanicus* (Forst.). There can be little doubt that Capt. Abbott's "Jackass Penguin" (*anteà*, p. 336) has been wrongly referred to *Aptenodytes demersa*, and that it is really the *Spheniscus magellanicus*, which is a closely allied species.

Baron Richard König-Warthausen informs us that, according to Dr. Blasius (who has examined the parent-birds, now in the Stuttgart Museum), the Falcon's egg, described by him in the April Number of 'The Ibis' (*anteà*, p. 124), does not belong to *Falco eleonoræ*, but to *F. concolor*. Dr. Blasius likewise pronounces the little Tern obtained by Herr von Heuglin in the Red Sea (of which the eggs are described *anteà*, p. 125) to be *Sterna albigena*, Licht., and not *S. senegalensis*, Swains.

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